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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCESIn re Application of  
Edward A. Marue; Kenneth J. Pereira

Serial No: 09/596,850

Filed: June 19, 2000

For: TELESCOPING MAST WITH  
INTEGRAL PAYLOAD

Appeal No. \_\_\_\_\_

Examiner: R. Ramirez

Art Unit: 3632

Date: May 2, 2003

APPLICANT'S BRIEFRECEIVED  
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GROUP 3600

This is an appeal from the final rejection of Claims 1 - 17, all of the claims in this case. The text of the appealed claims are set forth in Appendix 1 to this Brief.

The Real Party in Interest

The real party in interest in this case is The Will-Burt Company, Assignee by mesne assignments from the applicants of the entire right, title and interest in, to and under this application. (See the assignment document recorded at Reel 010911, Frame 0528.)

Related Appeals and Interferences

There are no other appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in this pending appeal.

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### Status of Claims

All of the claims in this case, Claims 1 - 17, are the claims being appealed.

### Status of Amendments

No amendments to the claims were requested prior or subsequent to the filing of a Notice of Appeal. The Notice of Appeal was duly filed on March 3, 2003.

### Summary of the Invention

Telescoping masts have been widely employed for vertically deploying and retracting payloads such as radio antennas, lights, television cameras, preamplifiers, radiation sensors, etc., etc. The mast assemblies typically place the payload on top of the upper end of the uppermost section of the mast assembly. When the mast is either extended or retracted, the payload remains unprotected, above the telescoping sections. Alternatively, mast assemblies have been devised wherein the entire mast, including the individual telescoping sections, form the payload. An example of such a construction is the traditional telescoping radio antenna found on many automobiles. Unfortunately, these mast constructions do not provide suitable protection for the payload, such as against inclement weather, radiation or EMF pulses which can cause damage to the pertinent radio electronics.

To overcome these disadvantages, Applicant's invention is directed to a telescoping mast assembly wherein each component of the mast extends and retracts along the

longitudinal axis of the mast. The telescoping mast includes a fixed bottom section, a non-payload carrying intermediate sections and a payload section. Of importance, as claimed the mast's payload integrally forms at least a portion of the payload section so that the payload may be received within a lower intermediate support section. Also of importance, the claimed mast includes at least one protective intermediate section that does not integrate the payload. This design provides an improvement over the prior art by providing an inexpensive telescoping mast structure which provides additional protection to a payload when the mast is retracted. Moreover, the retracted height of the mast assembly is reduced compared to prior art mast assemblies by integrating the payload into the mast, as opposed to placing the payload on top of the mast.

#### Issues

**The Examiner concedes that the prior art does not disclose or suggest Applicant's invention, and the claims are not rejected under 35 U.S.C. §102 or 35 U.S.C. §103.** Instead, interestingly, the present issue concerns an interpretation of law. Specifically, the Examiner contends that a recent ruling by the Federal Circuit, *Pannu v. Storz Instrument, Inc.*, 258 F.3d 1366 (Fed. Cir. 2001), alters the traditional application of the "Recapture Rule" so as to bar allowance of Applicant's claims. Conversely, Applicant contends that the decision in *Pannu v. Storz* was merely a reiteration of the Recapture Rule as applied in *Ball Corp. v. U.S.*, 221 U.S.P.Q. 2d 289, 295 (Fed. Cir. 1984) and in *In Re Clement*, 131 F. 3d 1464 (Fed. Cir. 1997). Further, Applicant contends that applying the

Recapture Rule of any of these cases would not bar allowance of Applicant's claims.

Copies of *Pannu*, *Ball Corp.*, and *Clement* are attached herewith as Appendices 2 - 4.

#### Grouping of Claims

Claims 1 - 17 constitute a single group. The claims of this group stand or fall together.

### ARGUMENT

#### The Claims at Issue are Narrower Than the Claims of the Original Application, But Broader Than the Issued Claims of the Parent Patent

The present application is a reissue continuation application filed on June 19, 2000 which is a continuation of reissue application Serial No. 09/283,843 filed on March 31, 1999, which is, in turn, a reissue application of U.S. Patent No. 5,615,855 ("the '855 patent") issued on April 1, 1997. Because the initial reissue application was filed within two years of the '855 patent's issuance, Applicant may obtain claims broader in scope than originally presented in the issued '855 patent. (See 35 U.S.C. §251 and 37 C.F.R. §1.73(a)).

Admittedly, the claims of the present reissue application are broader, in some respects, to the claims of the '855 patent. However, the claims of the present application are not barred by the Recapture Rule. As correctly stated by the Examiner, the Recapture

Rule bars the patentee from acquiring, through reissue, claims that are of the same or broader scope than those claims that were cancelled from the original application. See *Ball Corp. v. U.S.* Accordingly, the Recapture Rule requires a comparison of the instant claims to the cancelled claims of the original application. The claim from the original application that was cancelled during prosecution is set forth as follows.

1. An integrated telescoping mast-payload assembly comprising:
  - (a) at least two nesting, telescoping mast sections having upper and lower ends,
    - (i) a lower section
    - (ii) a top section, dimensioned to slidably nest within said lower section,
  - (b) means for extending and retracting said top section relative to said lower section from a fully retracted position to a fully extended position,
  - (c) a payload forming the upper end of said top section, at least a portion of said payload being received within said lower section when said top section is fully retracted.

During prosecution of the earlier application, the Examiner correctly recognized that though the claim indicated that the payload forms part of the top section of the mast assembly, with at least a portion of the payload being received within the lower mast section when retracted, the claim did not properly exclude mast assemblies where the payload comprised not only the uppermost section, but were also carried in the lower immediate sections or in the bottom section of the mast assembly. Thus, the claim would read on mast assemblies such as telescoping automobile radio antennas. Recognizing that the invention was directed to a payload forming a mast section being protected by non-payload carrying intermediate mast sections, Applicant amended the claim to define a mast assembly wherein the payload was located only in the mast assembly's uppermost mast section. The claim was allowed resulting in only independent claim in the '855 patent. This claim is set forth as follows.

1. In a telescoping mast assembly, including:

a plurality of nesting, telescoping mast sections, including a top section and at least one lower section, each of said sections having upper and lower ends, and

means for extending and retracting each of said sections relative to the next-lower section,

the improvement comprising:

a payload, located only in said top section,

said top section, including said payload, being dimensioned to be received  
and nest within the next-lower section,

at least a portion of said payload being received within said next-lower  
section when said top section is fully retracted,

such that said next-lower section provides protection for

said payload when said top section is fully retracted,

said payload being a member of the group consisting of radio antennas,  
lights, instrumentation and telemetry packages for robotic vehicles, television  
cameras, antenna rotators, preamplifiers, radiation sensors and electronic and  
electro-mechanical instrument packages. (Claim 1 of U.S. Patent No. 5,615,855)

A review of the claims of the instant application, the cancelled claims of the original  
application and the allowed claims of U.S. Patent No. 5,615,855 demonstrates that the  
cancelled claim, by far, is of the broadest scope, covering any telescoping mast assembly

wherein a payload is located in the top section of the assembly, but also including constructions where the payload is in a bottom section, or in an intermediate section. The only independent claim of the '855 patent is significantly narrower than the cancelled claim as it covers only telescoping mast assemblies wherein the payload is located only in the top section of the mast assembly.

Applicant realized after issuance of the '855 patent that it had unduly narrowed the scope of the original claim. The claim was narrowed from a mast including a payload forming a part of any and all sections of the mast to be directed to a payload located in only the uppermost section of the mast. However, a claim would have been allowed directed to a telescoping mast assembly including a payload forming a portion of a "payload" section and including lower non-payload carrying intermediate sections for protecting the payload section. Moreover, Applicant realized that the claims directed to a "vehicle mounted" mast assembly including a payload section, non-payload intermediate sections, and attachment means for mounting to a vehicle, would also be allowable.

Accordingly, Applicant filed a reissue application including claims directed to mast assemblies including a payload forming a portion of a payload section and including lower non-payload carrying intermediate sections for protecting the payload section (claims 1 -17) and filed claims directed to "vehicle mounted" mast assembly including a payload section and non-payload lower sections (claims 13 - 17). Admittedly, the claims of the instant application are broader than the claims of the '855 patent, namely the payload section need



not be positioned only in the uppermost section.<sup>1</sup> However, Applicant has added a first set of narrowing limitations to all the claims which directly relate to the claims' broadening. Namely, the telescoping mast includes non-payload carrying intermediate sections which were not found in the originally cancelled claim (Claims 1 -17). Moreover, Applicant has added narrowing limitations which do not relate to their broadening, namely, the telescoping mast is vehicle mounted. (Claims 13 - 17). Thus, the claims of the instant application are significantly narrower than the cancelled claim as they include the limitations that the telescoping mast assembly include a plurality of non-payload carrying intermediate sections (Claims 1 -12), or the telescoping mast assembly includes at least one non-payload carrying intermediate section for protecting the payload section and an attachment means for attaching the telescoping mast assembly to a vehicle (Claims 13 - 17). Accordingly, the scope of the cancelled claims, claims of the '855 patent and claims of the present application can be graphically depicted as follows.

|-----scope of cancelled claims-----|

|-----scope of claims in '855 patent-----|

|-----scope of claims in present application-----|

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<sup>1</sup> The Claims of the present application may be permissibly broader in scope than the '855 patent as the application stems from a reissue application filed within two (2) years of the issue date of the '855 patent. See 35 U.S.C. §251.

Now turning back to the Recapture Rule, the Recapture Rule bars the patentee from acquiring, through reissue, claims that are of the same or broader scope than those claims that were cancelled from the original application. *Ball Corp. v. U.S.*, 221 U.S.P.Q. § 289, 295 (Fed. Cir. 1984). However, the claims of the present application are clearly narrower in all aspects, not broader or of the same scope, than the cancelled claims.

The foregoing is not believed to be in dispute, as the Examiner has not contested that the claims of the present application are narrower in all respects to the scope of the claims that were cancelled in the application that resulted in the '855 patent. Also, it is not believed that the Examiner contests that the narrowing of the claims relate to their broadening. Moreover, Applicant does not contest the Examiner's contention that the changes to the claims relate to subject matter that was previously surrendered. Thus, the facts and interpretation of the claims is not believed to be in dispute. Instead, the dispute between Applicant and the Examiner arises completely from their respective interpretations of the decisions by the Federal Circuit in *Ball Corp. v. U.S.* decided in 1984; in *In Re Clement* decided in 1997 and in *Pannu v. Storz Instrument, Inc.* decided in 2001.

*Ball Corp. v. U.S.*, 221 U.S.P.Q. 289 (Fed. Cir. 1984)

According to *Ball Corp. v. U.S.*, the Recapture Rule bars the patentee from acquiring, through reissue, claims that are of the same or broader scope than those claims that were cancelled from the original application. See *Ball Corp.* at 295. Accordingly, *Ball Corp.* requires a comparison of the instant claims to the claims that were cancelled during

prosecution of the application that resulted in the '855 patent to determine whether the Recapture Rule applies.

As explained above, there is no dispute that the claims of the present application are narrower than the claims that were cancelled during prosecution of the application that resulted in the '855 patent. Accordingly, application of the test set forth in *Ball Corp.* indicates that the Recapture Rule does not apply, and the claims of the present application are not barred from allowance.

As also stated in *Ball Corp.*, the Recapture Rule prohibition is *presumptively* avoided as to claims that are, as compared to cancelled claims of the parent application, narrower in some respect and broader only with respect to limitations that are not pertinent to the alleged error. Here, the claims are narrower in all respects to the cancelled claims, which permitted the payload to be located in any of the mast sections, and not broader in any other respect. Thus, under additional *presumption* test set forth in Ball Corp., the Recapture Rule is avoided.

*In Re Clement*, 131 F.3d 1464 (Fed. Cir. 1997)

*In Re Clement* set forth a test for establishing application of the Recapture Rule which included three elements:

- 1) if the reissue claim is as broad or broader than the cancelled claim in all respects, the Recapture Rule bars the claim;

- 2) if it is narrower in all aspects, the Recapture Rule does not apply, but other rejections are possible;
- 3) if the reissue claim is broader in some aspects, but narrower in others, than: a) if the reissue claim is as broad or broader than, or broader in an aspect germane to a prior art rejection, but narrower in another aspect completely unrelated to the rejection, the Recapture Rule bars the claims; b) if the reissue claim is narrower in an aspect germane to the prior art rejection, and broader in an aspect unrelated to the rejection, the Recapture Rule does not bar the claim, but other objections are possible.

Analyzing each of these elements in turn, and applying the first element, the reissue claims are not as broad or broader than the cancelled claim, which permitted the payload to be located in any and all mast sections, in all respects. Instead, the reissue claims are narrower in all respects to the cancelled claims, as the claims now include the limitations directed to the mast including non-payload carrying intermediate sections (claims 1 - 17) and the mast being vehicle mounted (Claims 13 - 17). Thus, the Recapture Rule is not applied under the first element of the test.

Applying the second part of the *In Re Clement* test, the claims of the present application are narrower in all aspects as compared to the cancelled claims of the parent application. Thus, application of element No. 2 of the *In Re Clement* test indicates that the Recapture Rule does not apply.

Turning to the third part of the test, the reissue claims are *narrower* than the cancelled claims in an aspect germane to the prior art rejection. In particular, the cancelled claim covered mast assemblies wherein the payload was carried in any of the mast sections, while the present claims have been narrowed to exclude such constructions, having limitations that the mast assembly include non-payload carrying intermediate sections for protecting the payload when the mast assembly is retracted. Further, Claims 13 - 17 also included unrelated limitations directed to the mast being vehicle mounted. Thus, since the present claims are narrower in an aspect germane to the prior art rejection, and certainly not broader in any respect, the third element of the *In Re Clement* test indicates that the Recapture Rule does not bar the present claims.

*Pannu v. Storz Instrument, Inc.*, 258 F.3d 1366 (Fed. Cir. 2001)

In *Pannu*, the Federal Circuit applied a three step process for determining application of the Recapture Rule. Under this test, the first step is to “determine whether and in what aspect the reissued claims are broader than the patent claims.” The second step is to “determine whether the broader aspects of the reissued claims related to the surrendered subject matter.” Finally, the court must “determine whether the reissued claims were materially narrowed in other respects to avoid the Recapture Rule”. Under *Pannu*, if the reissued claims include a narrowing aspect relating to their broadening, the Recapture Rule will not apply. This appears to be a restatement of the third element of the test in *In Re Clement* reflecting that a reissued claim may be broader if the reissued claims are narrowed in a material respect compared with their initial broadening. See *Pannu*, 258

F.3d 1366. Applying the test set forth in *Pannu* indicates that the Recapture Rule does not apply. Admittedly, application of the first two steps of the *Pannu* test support application of the Recapture Rule. The reissued claims are broader than the patent claims, and the broader aspects of the reissued claims relate to surrendered subject matter. However, the third part of the *Pannu* test indicates that the Recapture Rule does not apply. Specifically, Applicant has narrowed the claims in a “material respect compared with their broadening”.

The narrowing of the present claims, requiring that the mast include non-payload carrying intermediate sections, relates directly to the claims’ broadening, which eliminated the requirement that the payload be located only in the uppermost section of the mast. Thus, under the *Pannu* test, the Recapture Rule does not apply.

### CONCLUSION

Applying the tests set out in *Ball Corp. v. U.S.*, *In Re Clement*, and *Pannu v. Storz Instrument, Inc.* reflects that the Recapture Rule does not apply to bar allowance of the claims of the present application. Accordingly, the Examiner’s rejection of the claims on this basis must be reversed.

The Board of Appeals' attention to this matter is greatly appreciated.

Respectfully submitted,

DRUMMOND & DUCKWORTH

A handwritten signature in black ink, appearing to read "David G. Duckworth", written in a cursive style.

David G. Duckworth

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## **APPENDIX**

The appealed claims are:

1. A telescoping mast-payload assembly for reducing the retracted height of a mast-payload assembly and for providing protection of a payload when said mast-payload assembly is retracted, said mast-payload assembly comprising:

(a) a telescoping mast component extending and retracting along the mast's longitudinal axis defining a mast axis, said telescoping mast component comprising:

a telescoping mast, adapted to telescope upwardly along said mast axis to an extended position and to telescope downwardly along said mast axis to a retracted position, said telescoping mast comprising:

a fixed bottom section being shaped and dimensioned to include a hollow region for telescopically receiving a next higher mast section;

a plurality of extending and retracting non-payload carrying intermediate mast sections, each section having upper and lower ends and being shaped and dimensioned to include a hollow region for telescopically receiving the next higher mast section; and

an extending and retracting payload section shaped and dimensioned to be telescopically received within the hollow region of the uppermost section of said intermediate sections;

said intermediate support sections and said payload section being constructed to telescopically retract along said mast axis within the hollow region of the next lower mast section and to telescopically extend along said mast axis above the next lower mast section, said plurality of intermediate support sections supporting said payload section when said mast is extended to said extended position and receiving and protecting said payload section when said mast is retracted to said retracted position; and

- (b) a payload component of said assembly forming at least a portion of said payload section, and being shaped and dimensioned to extend along said mast axis to be supported above the next-lower support section when said mast-payload assembly is extended to said extended position and to retract along said mast axis and to be at least partially received and protected within said non-payload carrying intermediate support sections when said mast is in retracted to said retracted position.

2. The telescoping mast-payload assembly of Claim 1 wherein the payload is a member of the group consisting of radio antennas, lights, television cameras, antenna rotators, preamplifiers, radiation sensors, instrumentation and telemetry packages for robotic vehicles, and electronic and electro-mechanical instrument packages.

3. The telescoping mast-payload assembly of Claim 1 wherein the payload is a radio antenna.

4. The telescoping mast-payload assembly of Claim 1 being mounted on a vehicle.

5. The telescoping mast-payload assembly of Claim 3 being mounted on a vehicle.

6. The telescoping mast-payload assembly of Claim 1, further including motor drive means for extending and retracting said payload section and said intermediate support sections relative to said bottom section.

7. A telescoping mast-payload assembly for reducing the retracted height of a mast-payload assembly and for providing protection of a payload when said mast-payload assembly is retracted, said mast-payload assembly comprising:

(a) a telescoping mast component extending and retracting along the mast's longitudinal axis defining a mast axis, said telescoping mast component comprising:

a telescoping mast, adapted to telescope upwardly along said mast axis to an extended position and to telescope downwardly along said mast axis to a retracted position, said telescoping mast comprising:

a fixed bottom section being shaped and dimensioned to include a hollow region for telescopically receiving a next higher mast section;

a plurality of extending and retracting non-payload carrying intermediate mast sections, each section having upper and lower ends and being shaped and dimensioned to include a hollow region for telescopically receiving the next higher mast section; and

an extending and retracting payload section shaped and dimensioned to be telescopically received within the hollow region of the uppermost section of said intermediate sections;

said intermediate support sections and said payload section being constructed to telescopically retract along said mast axis within the hollow region of the next lower mast section and to telescopically extend along said mast axis above the next lower mast section, said plurality of intermediate support sections supporting said payload section when said mast is extended to said extended position and receiving and protecting said payload section when said mast is retracted to said retracted position;

- (b) a payload component of said assembly forming at least a portion of said payload section, and being shaped and dimensioned to extend along said mast axis to be supported above the next-lower support section, when said mast-payload assembly is extended to said extended position and to retract along said mast axis and to be at least partially received and protected within said non-payload carrying intermediate support sections when said mast is in retracted to said retracted position; and
- (c) motor drive means for extending and retracting said payload section and said intermediate support sections relative to said bottom section.

8. The telescoping mast-payload assembly of Claim 7 wherein the payload is a member of the group consisting of radio antennas, lights, television cameras, antenna rotators, preamplifiers, radiation sensors, instrumentation and telemetry packages for robotic vehicles, and electronic and electro-mechanical instrument packages.

9. The telescoping mast-payload assembly of Claim 7 wherein the payload is a radio antennae.

10. The telescoping mast-payload assembly of Claim 8 being mounted on a vehicle.

11. The telescoping mast-payload assembly of Claim 9 being mounted on a vehicle.

12. The telescoping mast-payload assembly of Claim 7 further comprising:  
a transmission line cable for transmitting a signal to or from said payload; and  
a subassembly for stowing and dispensing said cable when said mast assembly is retracted and extended.

13. A vehicular mounted telescoping mast-payload assembly for reducing the retracted height of a mast-payload assembly and for providing protection of a payload when said mast-payload assembly is retracted, said mast-payload assembly comprising:

(a) a telescoping mast component extending and retracting along the mast's longitudinal axis defining a mast axis, said telescoping mast component comprising:

a telescoping mast, adapted to telescope upwardly along said mast axis to an extended position and to telescope downwardly along said mast axis to a retracted position, said mast comprising:

a fixed bottom section being shaped and dimensioned to include a hollow region for telescopically receiving a next higher mast section;

an extending and retracting non-payload carrying intermediate mast section, said section having an upper and lower end and being shaped and dimensioned to include a hollow region for telescopically receiving a next higher mast section; and



an extending and retracting payload section shaped and dimensioned to be telescopically received within the hollow region of said intermediate section;

said intermediate support sections and said payload section being constructed to telescopically retract along said mast axis within the hollow region of the next lower mast section and to telescopically extend along said mast axis above the next lower mast section, said intermediate support section supporting said payload section when said mast is extended to said extended position and receiving and protecting said payload section when said mast is retracted to said retracted position;

- (b) a payload component of said assembly forming at least a portion of said payload section, and being shaped and dimensioned to extend along said mast axis to be supported above the next-lower support section when said mast-payload assembly is extended to said extended position and to retract along said mast axis and to be at least partially received and protected within said non-payload carrying intermediate support section when said mast is retracted in said retracted position; and

- (c) attachment means for attaching said bottom section to a vehicle.

14. The telescoping mast-payload assembly of Claim 13 wherein the payload is a member of the group consisting of radio antennas, lights, television cameras, antenna rotators, preamplifiers, radiation sensors, instrumentation and telemetry packages for robotic vehicles, and electronic and electro-mechanical instrument packages.

15. The telescoping mast-payload assembly of Claim 13 wherein the payload is a radio antennae.

16. The telescoping mast-payload assembly of Claim 14 further comprising:  
a transmission line cable for transmitting a signal to or from said payload; and  
a subassembly for stowing and dispensing said cable when said mast assembly is retracted and extended.

17. The telescoping mast-payload assembly of Claim 13, further including motor drive means for extending and retracting said payload section and said intermediate support sections relative to said bottom section.

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59 U.S.P.Q.2D 1597  
258 F.3d 1366  
(Cite as: 59 U.S.P.Q.2d 1597)

**H**

Pannu  
v.  
Storz Instruments Inc.

U.S. Court of Appeals Federal Circuit

No. 00-1482

Decided July 25, 2001

## **PATENTS**

**[1] Practice and procedure in Patent and Trademark Office -- Reissue -- Broader claims sought (§ 110.1313)**

**Patentability/Validity -- Construction of claims (§ 115.03)**

**Patent construction -- Prosecution history estoppel (§ 125.09)**

Plaintiff's reissue claim for intraocular lens is invalid on ground of improper recapture of subject matter surrendered during prosecution to avoid prior art rejections, since reissue claim eliminated limitation on shape of "haptics" element of lens, and thus is broader than corresponding claim of original patent, since this broadened aspect of claim relates to surrendered subject matter, in that shape of haptics was same subject matter that was surrendered during prosecution of original application, and since recapture was not avoided by addition, on reissue, of limitations on haptics' dimensions and positioning, which do not narrow claim in manner directly pertinent to specific aspect that was narrowed during prosecution, namely, shape of haptics.

## **PATENTS**

**Particular patents -- General and mechanical -- Intraocular lens**

Re. 35,525 (of 4,435,855), Pannu, universal intraocular lens and a method of measuring an eye chamber size, summary judgment of invalidity affirmed.

**\*1598** Appeal from the U.S. District Court for the Southern District of Florida, Dimitrouleas, J.

Action by Jaswant S. Pannu and Jaswant S. Pannu M.D., P.A. against Storz Instruments Inc. for patent infringement, in which defendant counterclaimed seeking declaratory judgment of invalidity. District court granted defendant's motion for summary judgment of invalidity, and plaintiff appealed. Affirmed.

Related decision: 47 USPQ2d 1657.

Michael C. Cesarano, of Senterfitt & Eidson, Miami, Fla., for plaintiffs- appellants.

Edward W. Remus and Jonathan R. Sick, of McAndrews, Held & Malloy, Chicago, Ill.; Craig E. Larson, of Bausch & Lomb Inc., Rochester, N.Y.; Rita D. Vacca, of Bausch & Lomb Surgical Inc., St. Louis, Mo., for defendant-appellee.

Before Mayer, chief judge, Friedman, senior circuit judge, and Rader, circuit judge.

Mayer, C.J.

Jaswant S. Pannu and Jaswant S. Pannu, M.D., P.A. (collectively Pannu) appeal the judgment of the United States District Court for the Southern District of Florida, Pannu v. Storz Instruments, Inc., 106 F. Supp. 2d 1304 (S.D. Fla. 2000), granting summary judgment for Storz Instruments, Inc. (Storz) that U.S. Patent No. Re 32,525 is invalid under 35 U.S.C. § 251, the recapture rule. Because the reissued patent improperly broadened claims in a manner directly pertinent to subject matter surrendered during prosecution, we affirm.

### Background

In 1980, Pannu filed a patent application for an artificial intraocular lens, S/N 136,243 ('243 application). An intraocular lens is an artificial plastic lens that may be implanted in an eye to replace a natural lens. The '243 application disclosed a round lens called an "optic" that focuses light on the retina, and two or more elements called "haptics" that are attached to the optic and contact internal tissue in the eye for the purpose of positioning and securing the optic. The haptics in Pannu's application included "snag resistant" discs at the end. In 1981, Pannu filed a continuation-in-part application, S/N 261,953 ('953 application), based on the original '243 application. The '953 application added new matter, claiming a lens in which the haptics are "integrally molded" to the lens body, and the lens could be placed in either the anterior or posterior chamber of the eye. [FN1]

Independent claim 1 of the '953 application reads as follows:

A posterior chamber intraocular lens comprising:

a lens having a width and a thickness;

a retention loop including a flexible strand having a width and a thickness and such strand is joined at one end to the lens and has an opposite free end;

and a snag resistant disc joined to the flexible strand's free end;

said snag resistant disc having a width which is at least 3 times greater than the thickness of the disc, at least 3 times greater than the width of the flexible strand, and at least 1/5 as great as the width of the lens for smoothly guiding the free end of the flexible strand across an inner edge of an iris when moving said strand into and out of a posterior chamber of an eye;

said snag resistant disc lying in a plane sufficiently close to a plane of the lens so that both the disc and lens can fit into a posterior chamber behind an eye's iris.

The examiner rejected claims 1-14 as obvious under 35 U.S.C. § 103 in light of four prior art references: U.S. Patent No. 4,159,546 (Shearing patent), a publication showing the "Lindstrom Centrex" lens, U.S. Patent No. 4,249,271 (Poler patent), and U.S. Patent No. 4,092,743 (Kelman patent). In response, Pannu filed a supplemental amendment that cancelled claims 1-7 and 10-14, added new claims 16-22, and modified claims 8 and 9 to be dependent upon claim 16. Independent claim 16 reads as follows:

An intraocular lens comprising:

a lens body;

**\*1599** at least two flexible positioning and supporting elements integrally formed with said lens body and extending from the periphery of said lens body;

said elements defining a continuous, substantially circular arc having a diameter greater than the diameter of said lens body, said arc curved toward said lens circumference; and

snag resistant means integrally formed on the free end of said elements for smoothly guiding the lens across eye tissue when implanting the lens.

Pannu raised six arguments for the patentability of claim 16 over the four prior art references, including the distinction of "a continuous substantially circular arc having a diameter greater than the diameter of the lens body . . . which significantly enhance the easy insertibility of applicant's lens and significantly reduce any possibility of snagging delicate eye tissue." The examiner accepted Pannu's arguments, and allowed claim 16 subject to minor amendments to set forth precisely the structural details of the haptics. Claim 16 issued as claim 1 of U.S. Patent No. 4,435,855 ('855 patent) and reads as follows:

An intraocular lens comprising:

a lens body;

at least two spaced flexible positioning and supporting elements integrally formed with said lens body as a one piece construction and extending radially outward from the periphery of said lens body;

said elements defining a continuous, substantially circular arc having a diameter greater than the diameter of said lens body, said arc curved toward said lens circumference and terminating in a free end spaced from said periphery; and

snag resistant means integrally formed on the free end of said elements for smoothly guiding and positioning the lens across contacted eye tissue when implanting the lens,

said snag resistant means having an uninterrupted continuously smoothly curved outer periphery which merges with said free end and is substantially greater in size than the width of said flexible elements.

In 1985, Pannu filed an application for reissue of the '855 patent. The supplemental reissue oath stated that Pannu "unduly and without deceptive intent narrowed the claims beyond what was necessitated by the applied prior art by describing the shape of the outwardly extending elements as defining 'a continuous, substantially circular arc having a diameter greater than the diameter of the lens body.'" The examiner allowed Pannu to delete "defining a continuous, substantially circular arc having a diameter greater than the diameter of said lens body, said arc curved toward said lens circumference and terminating in a free end" from claim 1. However, the examiner required Pannu to insert additional limitations into the last section of the claim. The last section of claim 1 reads as follows with italics indicating additions and bracketing indicating deletions:

said snag resistant means having an uninterrupted, continuously smoothly curved outer periphery which merges with said free end and is [substantially] at least three times greater in [size] width than the width of said flexible elements, said snag resistant elements and said positioning and supporting elements being substantially coplanar.

Pannu filed suit against Storz, alleging that intraocular lenses sold by Storz infringed the '525 reissue. Storz filed a counterclaim seeking a declaratory judgment of patent invalidity, and moved for summary judgment that the '525 reissue improperly recaptures subject matter Pannu surrendered in obtaining allowance of claim 1 of the '855 patent. The court granted Storz's motion for summary judgment of invalidity and Pannu appeals.

### Discussion

"We review a district court's grant of summary judgment de novo." Vanmoor v. Wal-Mart Stores, Inc., 201 F.3d 1363, 1365, 53 USPQ2d 1377, 1378 (Fed. Cir. 2000). Determining whether the claims of a

reissued patent violate 35 U.S.C. § 251 is a question of law, which we review de novo. In re Clement, 131 F.3d 1464, 1468, 45 USPQ2d 1161, 1163 (Fed. Cir. 1997); Mentor Corp. v. Coloplast, Inc., 998 F.2d 992, 995, 27 USPQ2d 1521, 1524 (Fed. Cir. 1993). This legal conclusion can involve underlying findings of fact, which are reviewed for substantial evidence. Hester Indus., Inc. v. Stein, Inc., 142 F.3d 1472, 1479, 46 USPQ2d 1641, 1647 (Fed. Cir. 1998); Mentor, 998 F.2d at 994, 27 USPQ2d at 1524 (citing Ball Corp. v. United States, 729 F.2d 1429, 1439, 221 USPQ 289, 297 (Fed. Cir. 1984)). However, summary judgment is appropriate only when there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law. Vanmoor, 201 F.3d at 1365, 53 USPQ2d at 1378. \*1600 The underlying facts in this case are taken directly from the prosecution file histories and the claims of the '855 patent and the '525 reissue, and are not disputed. See Hester, 142 F.3d at 1484, 46 USPQ2d at 1651. Claim construction is a purely legal question, Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 USPQ2d 1169, 1174 (Fed. Cir. 1998) (en banc), and therefore, comparison of the claims of the '855 patent and the '525 reissue is a purely legal question appropriate for summary judgment, Westvaco Corp. v. Int'l Paper Co., 991 F.2d 735, 741, 26 USPQ2d 1353, 1358 (Fed. Cir. 1993) ("A determination of whether the scope of a reissue claim is identical with the scope of the original claim is a question of law, which we review de novo.").

The recapture rule "prevents a patentee from regaining through reissue the subject matter that he surrendered in an effort to obtain allowance of the original claims." Clement, 131 F.3d at 1468, 45 USPQ2d at 1164. Reissued claims that are broader than the original patent's claims in a manner directly pertinent to the subject matter surrendered during prosecution are impermissible. Id. (quoting Mentor, 998 F.2d at 996, 27 USPQ2d at 1525). Application of the recapture rule is a three-step process. The first step is to "determine whether and in what 'aspect' the reissue claims are broader than the patent claims." Id. "The second step is to determine whether the broader aspects of the reissued claim related to surrendered subject matter." Id. Finally, the court must determine whether the reissued claims were materially narrowed in other respects to avoid the recapture rule. Hester, 142 F.3d at 1482-83, 46 USPQ2d at 1649-50; Clement, 131 F.3d at 1470, 45 USPQ2d at 1165.

[1] With respect to the shape of the haptics, claim 1 of the '525 reissue is broader than claim 1 of the original '855 patent. Claim 1 of the '855 patent limited the haptics to "a continuous, substantially circular arc having a diameter greater than the diameter of said lens body, said arc curved toward said lens circumference." Claim 1 of the '525 reissue eliminated this limitation on the shape of the haptics. "A reissue claim that does not include a limitation present in the original patent claims is broader in that respect." Hester, 142 F.3d at 1480, 46 USPQ2d at 1648. In addition, Pannu's reissue oath admitted that he unnecessarily narrowed the scope of the claim with respect to the shape of the haptics. He stated that "the [haptics] may actually be of any shape as long as the elements terminate in a free end having snag resistant means as now recited in claim 1." Correction of Pannu's unnecessary narrowing of claim 1 must involve a corresponding broadening of the reissued claim.

Pannu argues that even if the reissued claim is broader, it did not relate to subject matter surrendered during prosecution. This argument is without merit. As originally filed, none of the claims in the '953 application limited the shape of the haptics. The examiner rejected claims 1-14 as obvious. In response to the rejection, Pannu filed a supplemental amendment canceling claim 1 and adding new independent



claim 16. Claim 16 described the haptics as "defining a continuous, substantially circular arc having a diameter greater than the diameter of said lens body, said arc curved toward said lens circumference." Pannu argued to the examiner, "no such particular shape is disclosed by the lenses of either Shearing or Lindstrom. In fact, Shearing teaches away from the concept of a continuous substantially circular arc supporting strand . . . [and] the Lindstrom lens illustrates a supporting strand with a somewhat irregular, elliptical shape." The addition of the "continuous, substantially circular arc" limitation to claim 16 and the statements made by Pannu to the examiner during prosecution of the '855 patent limited the claim to exclude an interpretation that did not include a continuous, substantially circular arc. See Southwall Techs., Inc. v. Cardinal AG Co., 54 F.3d 1570, 1576, 34 USPQ2d 1673, 1676 (1995). The shape of the haptics was broadened during reissue and was the same subject matter that was surrendered during prosecution.

Pannu argues, however, that because the reissued claims were materially narrowed in other respects, the '525 reissue avoids the recapture rule. See Hester, 142 F.3d at 1482-83, 46 USPQ2d at 1649-50; Clement, 131 F.3d at 1470, 45 USPQ2d at 1165; Mentor, 998 F.2d at 996, 27 USPQ2d at 1525. Instead of being "substantially greater" than the width of the haptics, the snag resistant means must now be "at least three times greater" than the width of the haptics. In addition, the snag resistant means must now be "substantially coplanar" with the haptics. Pannu argues that both modifications relate to the configuration of the haptics, and therefore, what is gained by the elimination of one limitation is given up by the addition of the other limitations.

The "continuous, substantially circular arc" limitation related to the shape of the haptics. The narrowing aspect of the claim on \*1601 reissue, however, was not related to the shape of the haptics, but rather the positioning and dimensions of the snag resistant means. Therefore, the reissued claims were not narrowed in any material respect compared with their broadening. Furthermore, "if the patentee is seeking to recover subject matter that had been surrendered during the initial prosecution this flexibility of analysis is eliminated, for the prosecution history establishes the substantiality of the change and estops its recapture." Anderson v. Int'l Eng'g & Mfg., Inc., 160 F.3d 1345, 1349, 48 USPQ2d 1631, 1634 (Fed. Cir. 1998); see also Mentor, 998 F.2d at 996, 27 USPQ2d at 1525 ("[I]n this case, the reissue claims are broader than the original patent claims in a manner directly pertinent to the subject matter surrendered during prosecution. Mentor thus attempted to reclaim what it earlier gave up."). In prosecuting the '855 patent, Pannu specifically limited the shape of the haptics to a "continuous, substantially circular arc." On reissue, he is estopped from attempting to recapture the precise limitation he added to overcome prior art rejections.

### Conclusion

Accordingly, we affirm the judgment of the United States District Court for the Southern District of Florida.

**AFFIRMED**

FN1. The eye is considered to have two chambers separated by the iris. The anterior chamber lies between the back surface of the cornea and front surface of the iris. Attorneys' Dictionary of Medicine and Word Finder A- 280 (1995). The posterior chamber is the space between the back surface of the iris and the front surface of the crystalline lens. Id. at P-280.

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729 F.2d 1429

221 U.S.P.Q. 289

(Cite as: 729 F.2d 1429)

**BALL CORPORATION, Appellee,**

**v.**

**The UNITED STATES, Appellant.**

**Appeal No. 84-680.**

United States Court of Appeals,  
Federal Circuit.

March 15, 1984.

Patentee brought action against the Government for alleged unauthorized use of invention. On cross motions for summary judgment, the Claims Court denied both motions. Permission was granted for the Government to take interlocutory appeal. The Court of Appeals, Edward S. Smith, Circuit Judge, held that: (1) construing liberally the term "error" in statute relating to reissue patents, patentee's deliberate cancelation of original single transmission feedline claims in patent for antenna assembly for use in missiles was sufficient error, in that it occurred without deceptive intent, to permit patentee to seek to secure, through reissue, claims narrower in scope than canceled claims in all material respects; (2) fact that the reissue claims were broader in one respect than the original claims did not bar patentee from securing reissue claims; and (3) patentee was not estopped to secure reissue claims.

Affirmed and remanded.

**[1] PATENTS k141(2)**

291k141(2)

Applicability of recapture rule and sufficiency-of-error standard under statute relating to reissue patents turned, in absence of other evidence of patentee's intent in deliberately canceling original claims, on similarity between reissue and canceled claims; narrower reissue claims were allowable, whereas broader reissue claims or reissue claims of same scope as canceled claims were not. 35 U.S.C.A. § 251.

**[1] PATENTS k141(3.1)**

291k141(3.1)

Formerly 291k141(3)

Applicability of recapture rule and sufficiency-of-error standard under statute relating to reissue patents turned, in absence of other evidence of patentee's intent in deliberately canceling original claims, on similarity between reissue and canceled claims; narrower reissue claims were allowable, whereas broader reissue claims or reissue claims of same scope as

canceled claims were not. 35 U.S.C.A. § 251.

**[1] PATENTS k141(6)**

291k141(6)

Applicability of recapture rule and sufficiency-of-error standard under statute relating to reissue patents turned, in absence of other evidence of patentee's intent in deliberately canceling original claims, on similarity between reissue and canceled claims; narrower reissue claims were allowable, whereas broader reissue claims or reissue claims of same scope as canceled claims were not. 35 U.S.C.A. § 251.

**[1] PATENTS k141(7)**

291k141(7)

Applicability of recapture rule and sufficiency-of-error standard under statute relating to reissue patents turned, in absence of other evidence of patentee's intent in deliberately canceling original claims, on similarity between reissue and canceled claims; narrower reissue claims were allowable, whereas broader reissue claims or reissue claims of same scope as canceled claims were not. 35 U.S.C.A. § 251.

**[2] PATENTS k141(2)**

291k141(2)

Subject matter of canceled original claims and claims presented in reissue application was not alone controlling on issue of applicability of recapture rule and sufficiency-of-error standard. 35 U.S.C.A. § 251.

**[2] PATENTS k141(6)**

291k141(6)

Subject matter of canceled original claims and claims presented in reissue application was not alone controlling on issue of applicability of recapture rule and sufficiency-of-error standard. 35 U.S.C.A. § 251.

**[3] PATENTS k141(2)**

291k141(2)

In determining applicability of recapture rule and sufficiency-of-error standard under statute relating to reissue of patents, focus is not on specific limitations or on elements of claims, but, rather, on respective scope of canceled original claims and reissue claims. 35 U.S.C.A. § 251.

**[3] PATENTS k141(6)**

291k141(6)

In determining applicability of recapture rule and sufficiency-of-error standard under statute relating to reissue of patents, focus is not on specific limitations or on elements of claims, but, rather, on respective scope of canceled original claims and reissue claims. 35 U.S.C.A. § 251.

**[4] PATENTS k141(2)**

**291k141(2)**

Construing liberally the term "error" in statute relating to reissue patents, patentee's deliberate cancelation of original single transmission feedline claims in patent application for antenna assembly for use in missiles was sufficient error, in that it occurred without deceptive intent, to permit patentee to seek to secure, through reissue, claims narrower in scope than canceled claims in all material respects. 35 U.S.C.A. § 251.

See publication Words and Phrases for other judicial constructions and definitions.

**[4] PATENTS k141(7)**

**291k141(7)**

Construing liberally the term "error" in statute relating to reissue patents, patentee's deliberate cancelation of original single transmission feedline claims in patent application for antenna assembly for use in missiles was sufficient error, in that it occurred without deceptive intent, to permit patentee to seek to secure, through reissue, claims narrower in scope than canceled claims in all material respects. 35 U.S.C.A. § 251.

See publication Words and Phrases for other judicial constructions and definitions.

**[5] PATENTS k141(3.1)**

**291k141(3.1)**

**Formerly 291k141(3)**

Fact that reissue claims were broader in one respect than canceled claims was not fatal to patentee's securing the reissue claims, where patentee filed application for reissue within two-year period for broadened reissue specified in statute and broader feature related to aspect of the invention that was not material to alleged error supporting reissue. 35 U.S.C.A. § 251.

**[6] PATENTS k134**

**291k134**

Reissue is remedial in nature and is based on fundamental principles of equity and fairness. 35 U.S.C.A. § 251.

**[7] PATENTS k141(6)**

**291k141(6)**

Recapture rule is inherently founded upon equity considerations.

**[8] PATENTS k168(2.1)**

**291k168(2.1)**

**Formerly 291k168(2)**

Government's "file wrapper estoppel" argument against allowance of reissue claims was unavailing at stage of proceedings not fully addressing validity and infringement issues, but only resolving controlling issue of law relative to those ultimate issues. 35 U.S.C.A. § 251.

**PATENTS k328(2)**

**291k328(2)**

2,234,234, 3,810,183. Cited.

**PATENTS k328(4)**

291k328(4)

29,296. Cited.

\*1430 Joseph A. Hill, Washington, D.C., for appellant.

Allen Kirkpatrick, Washington, D.C., for appellee.

Before BALDWIN, BENNETT and SMITH, Circuit Judges.

EDWARD S. SMITH, Circuit Judge.

This case presents the question whether a patentee is barred by the recapture rule from securing, through reissue, claims to subject matter previously canceled from the original application. Plaintiff-appellee, Ball Corporation (Ball), brought suit against the Government in the United States Court of Claims under 28 U.S.C. § 1498(a) (1976) for unauthorized use of the invention claimed in U.S. patent No. Re. 29,296 (July 5, 1977) to Krutsinger, et al. (the Krutsinger patent). The Government moved for summary judgment and Ball filed a cross-motion for summary judgment. Both motions were denied. [FN1] The Government appealed denial of its motion to this court. At the time of that first appeal, the judgment of the trial judge was not final and the issues had not been certified for appeal. In view of the uncertified, interlocutory nature of the appeal at that time, this court on March 30, 1983, issued an order dismissing the appeal for lack of jurisdiction with leave to seek certification and to appeal pursuant to 28 U.S.C. § 1292(d)(2). On November 22, 1983, the trial judge certified the questions. Permission was granted on December 12, 1983, to take interlocutory appeal to this court. The Government again appeals. We conclude \*1431 that the trial judge properly denied the Government's motion for summary judgment, and we remand the case for trial.

FN1. On October 8, 1982, pursuant to this court's order of October 4, 1982, Judge Colaianni of the U.S. Claims Court entered a judgment denying both parties' motions for summary judgment, corresponding to his earlier report in the case, filed by him as a trial judge of the U.S. Court of Claims on August 23, 1982.

**Background**

The invention covered by the Krutsinger patent relates to a dual slot antenna assembly [10] (Fig. 1) intended for use on missiles.

**TABULAR OR GRAPHIC MATERIAL SET AT THIS POINT IS NOT DISPLAYABLE**

The antenna (Fig. 2) consists of two thin cylindrical concentric conductors [20, 24] assembled so that they are radially spaced slightly apart to form a cavity [18]. The cavity may be void or may be filled with a dielectric material. The axial length of the conductors is substantially equal to one-half wavelength at the anticipated operating frequency of the antenna. The conductor assembly can be mounted around the outer skin of the vehicle (Fig. 1).

The circumferential edges of the cylindrical conductors define radiation slots [23, 25] (Fig. 3).

TABULAR OR GRAPHIC MATERIAL SET AT THIS POINT IS NOT DISPLAYABLE

Because the cylindrical conductors are one-half wavelength long, these radiation slots are, ipso facto, longitudinally spaced one-half wavelength apart at the anticipated operating frequency of the antenna. The radiation slots are excited by signal energy from a source and cooperate to produce an omnidirectional dipole radiation pattern. [FN2] Due to the one-half wavelength spacing between the radiation slots, the electromagnetic radiation emanating from the \*1432 slots [R sub1 , R sub2 ] radiates in the same direction and overlaps in an additive manner to provide a stronger radiation pattern.

FN2. Previous missile antennas exhibited signal nulls that made monitoring difficult from a ground tracking station as the missile rolled or changed direction in flight. The claimed antenna exhibits a substantially isotropic radiation pattern which overcomes this problem by eliminating signal nulls.

Signal energy is supplied to the antenna by a connector [70] (Fig. 4).

TABULAR OR GRAPHIC MATERIAL SET AT THIS POINT IS NOT DISPLAYABLE

In the preferred embodiment of the invention, the connection of the inner and outer cylindrical concentric conductive elements to the source is accomplished by means of a single coaxial transmission feedline. It is this feedline element around which the present controversy revolves. In particular, this case involves the number of feedlines to the outer conductor that may be properly claimed in the Krutsinger reissue patent in light of the prosecution history of the original patent application.

#### The Canceled Claims

Dependent claims 8 and 9 are the only claims of the original application critical to this appeal. Claim 8 includes the single feedline, whereas claim 9 does not. Claim 8 calls for "at least one" conductive lead to be connected to the edge of one of the conductors. Claim 9 requires that "a plurality of leads" be connected to the edge of one of the conductors at circumferentially spaced intervals.

In the first office action on the original application the examiner rejected claims 1-8 and indicated that claims 9 and 10 should be limited to a plurality of feedlines. The claims were amended and, on July 14, 1972, the examiner made his second rejection final. The examiner again suggested the allowability of the plurality of feedlines claims if presented in independent form. The remaining claims were rejected over the newly cited reference, Cork, U.S. patent No. 2,234,234. The Cork patent discloses a single feedline [3] (Fig. 5) and is similar in all other material respects to Krutsinger's antenna.

TABULAR OR GRAPHIC MATERIAL SET AT THIS POINT IS NOT DISPLAYABLE

Following the second office action, Ball added limitations to the claims requiring that a



plurality of leads be connected to an edge of the outer conductor. These leads were recited to be spaced-apart at intervals substantially equal to one wavelength at the anticipated operating frequency of the antenna. Ball also canceled claim 7 and dependent claim 8 (the canceled claims), of the original application, which are set forth below:

7. A dual slot antenna assembly comprising: a first substantially cylindrical conductor, the axial length of which is approximately equal to one-half wavelength at the anticipated operating frequency of said assembly; a second substantially cylindrical conductor, the axial length of which is at least equal to the axial length of said first conductor, said second conductor being positioned concentrically within and radially spaced from said first conductor so as to define a pair of circumferential slots spaced one-half wavelength apart at said anticipated operating frequency and providing independent radiation patterns emanating in the same direction; and electrical signal feed means connected with said \*1433 conductor for electrically exciting both of said slots.

8. An assembly according to Claim 7 wherein said feed means includes at least one conductive lead which terminates connected to the edge of one of said conductors defining one of said slots.

U.S. patent No. 3,810,183 (the original patent) issued on May 7, 1974, to Ball as assignee, on the basis of the original application, as amended.

Subsequently, Ball decided that it was entitled to claims broad enough to include the single feedline. On July 16, 1975, within the 2-year statutory period for broadened reissue provided in 35 U.S.C. § 251, Ball filed a reissue application. Claims 1-4 of the reissue application comprised the four claims of the original patent. New claims 5-7 were added to the reissue application. Only the new claims, 5-7, directed to the single feedline embodiment, are in issue in this proceeding. [FN3]

FN3. See *Haliczer v. United States*, 356 F.2d 541, 544-45, 148 USPQ 565, 568-69 (Ct.Cl.1966) (range of equivalents of original patent claims would not include canceled feature).

### The Alleged Error

In support of its reissue application Ball stated that the original patent was partially inoperative because it claimed less than Ball had a right to claim. Ball identified as error the undue limitation of the claims of the original patent to a plurality of feedlines:

[T]he unwarranted limited scope of our original patent claims were errors [sic] that arose without any deceptive intention as a result of inadequate and/or ineffective communication with our former patent attorney, \* \* \* and/or as a result of an inadequate understanding on our part of the potential effect of recitations in the original patent claim language under United States laws; \* \* \* [FN4]

FN4. See United States Patent and Trademark Office, Manual of Patent Examining Procedure § 1401.08 (1974) (error arising from a lack of understanding or of knowledge by applicant's attorney as to the real invention may be acceptable).

U.S. patent No. Re. 29,296 issued on July 5, 1977, on the basis of the reissue application.

### The Reissue Claims

Ball filed an administrative claim with the United States Navy on January 18, 1978, seeking damages and compensation for unauthorized use of, inter alia, the invention covered by claims 5, 6, and 7 of U.S. patent No. Re. 29,296. Claims 5, 6, and 7 of the reissue patent are set forth below:

5. A dual slot antenna assembly comprising:

a pair of laterally spaced-apart conductive elements separated with respect to one another by a sheet of dielectric material,

one of said conductive elements being of larger dimensions and underlying the other element and defining an electrical reference or ground surface;

said conductive elements defining a pair of radiation slots between opposing edges of said other element and said reference surface, said radiation slots being longitudinally spaced-apart a predetermined distance approximately equal to one-half wavelength at the anticipated operating frequency of said assembly,

each of which radiation slots emanates radiation therefrom such that the radiation patterns developed are in substantially the same direction;

said radiation slots having a length dimension equal to the entire length of said opposing edges, which length dimension is greater than the spacing between said conductive elements; and

a single electrical signal feed assembly integrally connected with said other conductive element at only one of said opposing edges for electrically exciting both of said radiation slots from a single signal feed junction.

\*1434 6. An assembly according to claim 5 wherein said conductive elements and said sheet of dielectric material each comprise part of a single sheet of dielectric material metallurgically cladded on opposite sides thereof.

7. An antenna structure comprising:

an electrically conducting ground surface,

a single layer electrically conducting surface comprising both an r.f. radiator conducting area and an r.f. feedline conducting area integrally connected thereto and formed therewith,

a dielectric sheet disposed between said ground surface and the single layer electrically conducting surface,

said conducting surfaces defining a pair of radiation slots between opposing edges of said r.f. radiator and said ground surface, said radiation slots being longitudinally spaced apart by a predetermined distance approximately equal to one-half wavelength at the anticipated operating frequency of said antenna structure;

each of which radiation slots emanates radiation therefrom such that radiation patterns developed are in substantially the same direction;

said radiation slots having a length dimension equal to the entire length of said opposing edges, which length dimension is greater than the spacing between said surfaces; and

said r.f. feedline being connected to the outside edge of one only of said opposing edges of said r.f. radiation conducting area to at least one predetermined point on the periphery of said radiator conducting area. [Emphasis in original.]

On March 25, 1981, Ball filed a petition in the United States Court of Claims under 28 U.S.C. § 1498 (1976), [FN5] seeking reasonable and entire compensation for the "infringement" of claims 5, 6, and 7 of U.S. patent No. Re. 29,296. On June 29, 1981, prior to filing an answer, the Government moved for summary judgment. Ball filed a cross-motion for summary judgment.

FN5. 28 U.S.C. § 1498 (1976), as amended by The Federal Courts Improvement Act of 1982, Pub.L. No. 97-164, 1982 U.S.CODE CONG. & AD.NEWS (96 Stat.) 25, provides, in pertinent part:

"§ 1498. Patent and copyright cases

"(a) Whenever an invention described in and covered by a patent of the United States is used or manufactured by or for the United States without license of the owner thereof or lawful right to use or manufacture the same, the owner's remedy shall be by action against the United States in the United States Claims Court for the recovery of his reasonable and entire compensation for such use and manufacture.

"For the purposes of this section, the use or manufacture of an invention described in and covered by a patent of the United States by a contractor, a subcontractor, or any person, firm, or corporation for the Government and with the authorization or consent of the Government, shall be construed as use or manufacture for the United States."

Judge Colaianni denied both motions. As to the Government's motion, denial of which is on appeal here, the trial judge found that the undisputed evidence of record did not support the Government's arguments; as to Ball's cross-motion, the trial judge found that material issues of fact remained which compelled denial of the motion. Because we agree that neither the recapture rule nor the estoppel doctrine mandate grant of the Government's summary judgment motion, we affirm.

### Issues

Two issues are raised in this appeal: (1) whether the error alleged by Ball is sufficient as a matter of law under 35 U.S.C. § 251 (1976) to support reissue; and (2) whether Ball is estopped from securing, through reissue, claims covering the single feedline feature.

The Government contends that Ball's deliberate cancelation of the single feedline claims was not error. That act was taken to avoid a prior art rejection and, in the Government's view, the recapture rule bars Ball from securing similar claims through reissue. The Government also contends \*1435 that the deliberate nature of Ball's acts estops Ball from securing similar claims through reissue. Ball did not appeal the denial of its summary judgment motion but, rather, defends the trial judge's opinion as correct as a matter of law. Resolution of this controversy involves a substantial body of precedent. [FN6] The parties differ in their interpretation of the law and in their application of it to the facts of this case.

FN6. The holdings of the U.S. Court of Claims and of the U.S. Court of Customs and Patent Appeals were adopted as precedent in this court in *South Corp. v. United States*, 690 F.2d 1368, 1370, 215 USPQ 657, 658

(Fed.Cir.1982). Both prior courts have ruled on the issues involved in this case. Additionally, several circuit courts have also considered the application of the recapture rule.

### The Recapture Rule

Reissue is not a substitute for Patent Office appeal procedures. Reissue is an extraordinary procedure and must be adequately supported by the circumstances detailed in 35 U.S.C. § 251 (1976) [FN7] and in the implementing regulations, 37 C.F.R. § 1.175 (1982). The Government asserts that the nature of error that will justify reissue is narrowly circumscribed to ensure that reissue remains the exception and not the rule. Relying on *Edward Miller & Co. v. Bridgeport Brass Co.*, [FN8] the Government contends that "a mere error of judgment" is not adequate to support reissue; rather the error must be "a real bona fide mistake, inadvertently committed."

FN7. Section 251 provides in pertinent part:

"§ 251. Reissue of defective patents

"Whenever any patent is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid, \* \* \* by reason of the patentee claiming more or less than he had a right to claim in the patent, the Commissioner shall, on the surrender of such patent and the payment of

the fee required by law, reissue the patent for the invention disclosed in the original patent, and in accordance with a new and amended application, for the unexpired part of the term of the original patent. \* \* \*

\* \* \*

"No reissued patent shall be granted enlarging the scope of the claims of the original patent unless applied for within two years from the grant of the original patent."  
(Emphasis supplied.)

FN8. *Edward Miller & Co. v. Bridgeport Brass Co.*, 104 U.S. 350, 355, 26 L.Ed. 783 (1882).

The 1952 revision of the patent laws made no substantive change in the definition of error under section 251. [FN9] While deliberate cancellation of a claim cannot ordinarily be considered error, [FN10] the CCPA has repeatedly held that the deliberate cancellation of claims may constitute error, if it occurs without deceptive intent. [FN11] In *In re Petrow*, [FN12] the CCPA went so far as to state that error is sufficient where the deliberate cancellation of claims does not amount to an admission that the reissue claims were not patentable at the time the original claims were canceled. Similarly, in *In re Wesseler*, [FN13] the CCPA stated that error is established where there is no evidence that the appellant intentionally omitted or abandoned the claimed subject matter. \*1436 Thus, the CCPA has construed the term error under section 251 broadly. [FN14]

FN9. In re Wadlinger, 496 F.2d 1200, 1206-07, 181 USPQ 826, 831-32 (Cust.Pat. & App.1974); In re Wessler, 367 F.2d 838, 849, 151 USPQ 339, 347 (Cust.Pat. & App.1966); In re Byers, 230 F.2d 451, 454, 109 USPQ 53, 55 (Cust.Pat. & App.1956); Riley v. Broadway-Hale Stores, Inc., 217 F.2d 530, 531 n. 1, 103 USPQ 414, 415 n. 1 (9th Cir.1954). But see In re Willingham, 282 F.2d 353, 355, 127 USPQ 211, 214 (Cust.Pat. & App.1960). "Error" is interpreted in the same manner as under section 64 of the old law, i.e., accident, inadvertence, or mistake.

FN10. In re Petrow, 402 F.2d 485, 487, 159 USPQ 449, 450 (Cust.Pat. & App.1968); Willingham, 282 F.2d at 357, 127 USPQ at 215.

FN11. See Wadlinger, 496 F.2d at 1206, 181 USPQ at 831; Petrow, 402 F.2d at 487, 159 USPQ at 450; Wessler, 367 F.2d at 849, 151 USPQ at 348; Willingham, 282 F.2d at 357, 127 USPQ at 215. See also Tee- Pak, Inc. v. St. Regis Paper Co., 491 F.2d 1193, 1201, 181 USPQ 75, 81 (6th Cir.1974); Manual of Patent Examining Procedure § 1401.08.

FN12. Petrow, 402 F.2d at 488, 159 USPQ at 451. See also Wessler, 367 F.2d at 846, 151 USPQ at 344-46; Willingham, 282 F.2d at 357, 127 USPQ at 215-16; Tee- Pak, 491 F.2d at 1201, 181 USPQ at 81.

FN13. Wessler, 367 F.2d at 850, 151 USPQ at 349. See also Riley, 217 F.2d at 532, 103 USPQ at 415.

FN14. Wadlinger, 496 F.2d at 1207-08, 181 USPQ at 832; In re Richman, 409 F.2d 269, 273-75, 161 USPQ 359, 362-63 (CCPA 1969); Wessler, 367 F.2d at 849, 151 USPQ at 347-48; Willingham, 282 F.2d at 355-56, 127 USPQ at 214. But see In re Wadsworth, 107 F.2d 596, 43 USPQ 460 (CCPA 1939).

The Ninth Circuit employed a more rigid standard in Riley v. Broadway-Hale Stores, Inc. [FN15] stating: "when the chief element added by reissue has been abandoned while seeking the original patent, the reissue is void." The trial judge sought to determine whether Ball had made a deliberate judgment that claims of substantially the same scope as the new reissue claims would have been unpatentable. The Government, arguing from Riley, submits that the trial judge's approach loses sight of the feature given up by a patentee in order to secure the original patent. We decline to adopt the rigid standard applied in Riley, in favor of the more liberal approach taken by the CCPA. Petrow clearly establishes the vitality of the standard employed by the trial judge under this court's precedent.

FN15. Riley, 217 F.2d at 532, 103 USPQ at 415.

Further, the Government argues that we need not reach the issue of claim scope because the sufficiency of error is a threshold issue. While claim scope is no oracle on intent, the Government fails to apprehend its role. Rarely is evidence of the patentee's intent in canceling a claim presented. Thus, the court may draw inferences from changes in claim scope when

other reliable evidence of the patentee's intent is not available. Claim scope is not the lodestar of reissue. Rather, the court's reliance on that indicator in the case law appears to be born of practical necessity as the only available reliable evidence.

The Government relies heavily on *Haliczer v. United States*, [FN16] which also involved a suit under 28 U.S.C. § 1498. The Court of Claims in that case held the reissue claims invalid because the patentee sought to acquire through reissue the same claims that had earlier been canceled from the original application. The recapture rule bars the patentee from acquiring, through reissue, claims that are of the same or of broader scope than those claims that were canceled from the original application. [FN17] On the other hand, the patentee is free to acquire, through reissue, claims that are narrower in scope than the canceled claims. [FN18] If the reissue claims are narrower than the canceled claims, yet broader than the original patent claims, reissue must be sought within 2 years after grant of the original patent.



FN16. *Haliczer*, 356 F.2d 541, 148 USPQ 565.

FN17. *Id.* at 545, 148 USPQ at 569 (bars reissue claims of same scope); *Byers*, 230 F.2d at 455-57, 109 USPQ at 56-57 (bars reissue claims that are of broader scope than canceled claims); *Wadsworth*, 107 F.2d at 599, 43 USPQ at 463 (bars reissue claims of similar scope).

FN18. *Wadlinger*, 496 F.2d at 1204, 181 USPQ at 830; *Petrow*, 402 F.2d at 488, 159 USPQ at 451; *Wesseler*, 367 F.2d at 846-47, 151 USPQ at 346; *Willingham*, 282 F.2d at 356, 127 USPQ at 215.

[1][2][3] Thus, the applicability of the recapture rule and the sufficiency of error under section 251 turn in this case, in the absence of other evidence of the patentee's intent, on the similarity between the reissue and the canceled claims. Narrower reissue claims are allowable; broader reissue claims or reissue claims of the same scope as the canceled claims are not. [FN19] The subject matter of the claims is not alone controlling. [FN20] Similarly, the focus is not, as the Government contends, on the specific limitations or on the elements of the claims but, rather, on the scope of the claims. [FN21]

FN19. If reissue is sought where claims have not been previously canceled, analysis becomes more difficult. In that case relative claim scope is not available to illuminate the alleged error. We are not faced with that situation in this proceeding.

FN20. *Petrow*, 402 F.2d at 488, 159 USPQ at 451.

FN21. *Richman*, 409 F.2d at 274-75, 161 USPQ at 362-63. See also *Wadsworth*, 107 F.2d 596, 43 USPQ 460 (analysis turns on substantiality of similarity of reissue to canceled claims).

[4] The trial judge required the Government to establish that the applicant has made a deliberate decision that the canceled claims are unpatentable. The Government argues that that standard is not correct because it loses sight of the feature that the patentee gave up during prosecution of the original application. We find the Government's argument entirely unpersuasive. The proper focus is on the scope of the claims, not on the individual feature or element purportedly given up during prosecution of the original application. The trial judge quite properly focused on the scope of the claims and we find no error in this respect. He determined that the reissue claims were intermediate in scope--broader than the claims of the original patent yet narrower than the canceled claims.

The alleged inadequacy of Ball's proffered error is not as clear as the Government contends. The error supporting reissue submitted by Ball comports with the statute and regulations. Further, we fail to perceive the "inconsistency" of Ball's position as asserted by the Government.

The canceled claims, claims 7 and 8, [FN22] define the invention quite broadly. Canceled claim 8 requires feed means including at least one conductive lead. The reissue claims, [FN23] in contrast, include limitations not present in the canceled claims: the cavity is filled with a dielectric material; and an electrical signal feed assembly replaces the feed means of the canceled claims. The electrical signal feed assembly (Fig. 6) is a network of leads with a single coaxial feedline to that network. The network consists of a plurality of thin ribbon-like conductive leads.

FN22. See supra "The Canceled Claims."

FN23. See supra "The Reissue Claims."

#### TABULAR OR GRAPHIC MATERIAL SET AT THIS POINT IS NOT DISPLAYABLE

Feed points [53] to the outer conductor are one wavelength apart at the anticipated operating frequency of the antenna. The leads of this network [52, 54, 56, 58] are dimensioned to provide continuous impedance matching between the cavity and the single coaxial feedline [70], which feeds into the assembly at the aperture [48]. The signal feed assembly is more limited than the "at least one" feed means limitation of canceled claim 8.

[5] The reissue claims are, however, broader in one respect. The canceled claims are limited to an antenna of cylindrical configuration, whereas the reissue claims are not so limited. We are aware of the principle that a claim that is broader in any respect is considered to be broader than the original claims even though it may be narrower in other respects. [FN24] That rule will not bar Ball from securing the reissue claims here on appeal.

FN24. In re Self, 671 F.2d 1344, 1346, 213 USPQ 1, 3 (Cust. & Pat.App.1982) (reissue application filed 7 years after issuance of original patent); In re Chromy, 318 F.2d 937, 939, 137 USPQ 884, 885 (Cust. & Pat.App.1963) (4 years after issue); In

re Price, 302 F.2d 741, 741-

42, 133 USPQ 527, 528 (Cust. & Pat.App.1962) (3 years after issue); In re Ruth, 278 F.2d 729, 730, 126 USPQ 155, 156 (Cust. & Pat.App.1960) (4 years after issue).

\*1438 Pursuant to section 251, broadened reissue must be sought within 2 years after issuance of the original patent. The CCPA, in In re Rogoff, [FN25] noted that section 251

FN25. In re Rogoff, 261 F.2d 601, 603-04, 120 USPQ 185, 186 (Cust.& Pat.App.1958).

contains no exceptions or qualifications as to time or extent of enlargement. The sole issue, therefore, is whether the claims on appeal enlarge, i.e., broaden, the patent claim. It is well settled that a claim is broadened, so far as the question of right to reissue is concerned, if it is so changed as to bring within its scope any structure which was not within the scope of the original claim. In other words, a claim is broadened if it is broader in any respect than the original claim, even though it may be narrowed in other respects. \* \* \*

Thus, the principle that a claim is broadened if it is broader in any respect than the original claim serves to effect the bar of section 251 against reissue filed later than 2 years after issuance of the original patent. In this case, Ball filed its application for reissue within the 2-year period for broadened reissue specified in section 251.

We know of no authority applying the above rule to reissue claims relative to the scope of canceled claims within the 2-year period for broadened reissue. Nor do we perceive the wisdom of such extension in this case. The rule is rigid and properly so in that it effects an express statutory limitation on broadened reissue. The recapture rule, however, is based on equitable principles. The rigidity of the broader-in-any-respect rule makes it inappropriate in the estoppel situation presented in this appeal.

Hence, we decline to apply that rule here, where the broader feature relates to an aspect of the invention that is not material to the alleged error supporting reissue. In Willingham, the CCPA reversed the rejection of a claim that was narrower than the canceled claim as to one element, although broader as to another element. "The extent to which [deliberate cancellation of a claim from the original application] may also prevent [a patentee] from obtaining other claims differing in form or substance from that cancelled necessarily depends upon the facts in each case and particularly on the reasons for the cancellation." [FN26] Accordingly, we hold that the reissue claims are not substantially identical in scope to the canceled claims.

FN26. Willingham, 282 F.2d at 357, 127 USPQ at 215.

As noted supra, there is widespread agreement that reissue claims that are narrower than the canceled claims are allowable. In In re Wadlinger, [FN27] the CCPA faced a situation in which the reissue claims were, as the trial judge found here, of "different" scope from the canceled claims. While both the reissue and canceled claims were directed to the same process



in Wadlinger, the canceled claims were considered broader, resulting in claims of different scope. The reissue claims were held valid. Similarly, we find that the non-material, broader aspects of Ball's reissue claims do not deprive them of their fundamental narrowness of scope relative to the canceled claims. Thus, the reissue claims are sufficiently narrower than the canceled claims to avoid the effect of the recapture rule.

FN27. Wadlinger, 496 F.2d at 1205-06, 181 USPQ at 830-31.

### Estoppel

[6][7] The Government also argues that Ball is estopped to secure the reissue claims. We do not consider this argument as stating an independent ground for relief. \*1439 The recapture rule is a creature of equity and it embodies the estoppel notions which the Government now urges upon us. [FN28] We have already resolved this issue against the Government.

FN28. Reissue is remedial in nature and is based on fundamental principles of equity and fairness. The recapture rule is inherently founded on similar considerations of equity, providing guidance in the application of the law governing reissue. See Wesseler, 367 F.2d at 848, 151 USPQ at 347; Willingham, 282 F.2d at 354-55, 127 USPQ at 214.

[8] We agree with the patentee that the Government's "file wrapper estoppel" argument is equally unavailing. The doctrine of estoppel based on the prosecution history is a corollary to the doctrine of equivalents, a tool in the analysis of infringement. The parties are before this court purely on a controlling issue of law relative to the validity of the reissue claims being asserted by Ball. There has not yet been a full trial on the issue of infringement, let alone on the validity of the reissue claims. [FN29] The Government's estoppel argument does no more than restate the basic equitable principles underlying the recapture rule.

FN29. The Government apparently misconstrues Haliczzer in this respect. In Haliczzer, the court determined that the doctrine of equivalents would require that the original claims, carried over into the reissue patent,

would not be entitled to the range of equivalents that were purposely surrendered during prosecution of the original patent. This is based on an estoppel notion born of the inconsistency of arguing that the original claims cover that which was given up during the prosecution of the original patent. The reissue claims, not the original claims, are in issue here and the Government's reasoning is, therefore, inapposite. There is no inconsistency in arguing the broadened scope of the reissue claims and, thus, no estoppel.

### Conclusion

The trial judge properly articulated the law governing reissue. While broader in scope than the original claims, the reissue claims are narrower in scope than the canceled claims. The error supporting reissue appears to be sufficient. On the basis of the facts before us and the

reasons given for the cancellation of the claims from the original application, we cannot find, as a matter of law, that Ball is barred from securing reissue claims drawn to the single feedline embodiment of its invention. The case is remanded to the Claims Court for further proceedings consistent with this opinion.

AFFIRMED AND REMANDED.

END OF DOCUMENT

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Copr. © West 2000 No Claim to Orig. U.S. Govt. Works

131 F.3d 1464

45 U.S.P.Q.2d 1161

(Cite as: 131 F.3d 1464)

**In re CLEMENT.**

**No. 97-1202.**

United States Court of Appeals,  
Federal Circuit.

Dec. 12, 1997.

Rehearing Denied; Suggestion for Rehearing In Banc Declined Feb. 18, 1998.

Patentee filed reissue application in connection with patent claiming method of treating waste paper to remove certain elements. The Board of Patent Appeals and Interferences sustained patent examiner's rejection of claims contained in reissue application, and patentee appealed. The Court of Appeals, Mayer, Circuit Judge, held that: (1) claims in reissue application which were broader than they were narrower in manner directly pertinent to subject matter that patentee surrendered throughout prosecution of patent were barred by recapture rule, and (2) defective declaration alone would not invalidate other claims that were not subject to recapture rule.

Affirmed in part and vacated in part.

**[1] PATENTS k144**

291k144

Determining whether applicant for reissue patent has met statutory requirements is question of law, which Court of Appeals reviews de novo, although legal conclusion is based on underlying findings of fact, which Court sustains unless they are clearly erroneous. 35 U.S.C.A. § 251.

**[2] PATENTS k136**

291k136

Attorney's failure to appreciate full scope of invention qualifies as error under statute permitting reissue of defective patents and is correctable by reissue, but deliberate withdrawal or amendment cannot be said to involve inadvertence or mistake contemplated by statute. 35 U.S.C.A. § 251.

**[3] PATENTS k141(6)**

291k141(6)

Recapture rule prevents patentee from regaining through reissue subject matter that patentee

surrendered in effort to obtain allowance of original claims, such that claims that are broader than original patent claims in manner directly pertinent to subject matter surrendered during prosecution are impermissible.

**[4] PATENTS k141(6)**

291k141(6)

In applying recapture rule, which prevents patentee from regaining through reissue subject matter that patentee surrendered in effort to obtain allowance of original claims, court first determines whether and in what aspect reissue claims are broader than patent claims and then determines whether broader aspects of reissue claims relate to surrendered subject matter. 35 U.S.C.A. § 251.

**[5] PATENTS k141(6)**

291k141(6)

To determine whether applicant for reissue patent surrendered particular subject matter, Court of Appeals looks to prosecution history for arguments and changes to claims made in effort to overcome prior art rejection. 35 U.S.C.A. § 251.

**[6] PATENTS k141(6)**

291k141(6)

Although recapture rule, which prevents patentee from regaining through reissue subject matter that patentee surrendered in effort to obtain allowance of original claims, does not apply in absence of evidence that applicant's amendment was admission that scope of that claim was not in fact patentable, court may draw inferences from changes in claim scope when other reliable evidence of patentee's intent is not available. 35 U.S.C.A. § 251.

**[7] PATENTS k168(2.2)**

291k168(2.2)

Deliberately canceling or amending patent claim in effort to overcome reference strongly suggests that applicant admits that scope of claim before cancellation or amendment is unpatentable, but it is not dispositive because other evidence in prosecution history may indicate the contrary.

**[8] PATENTS k141(6)**

291k141(6)

Once court determines that applicant for reissue patent has surrendered subject matter of canceled or amended claim, court then determines whether surrendered subject matter has crept into reissue claim.

**[9] PATENTS k141(6)**

291k141(6)

If scope of reissue claim is same as or broader than that of canceled claim, then patentee is clearly attempting to recapture surrendered subject matter and reissue claim is, therefore, unallowable, but reissue claim narrower in scope escapes recapture rule entirely.

**[9] PATENTS k141(7)**

291k141(7)

If scope of reissue claim is same as or broader than that of canceled claim, then patentee is clearly attempting to recapture surrendered subject matter and reissue claim is, therefore, unallowable, but reissue claim narrower in scope escapes recapture rule entirely.

**[10] PATENTS k141(6)**

291k141(6)

If reissue claim is broader in some aspects, but narrower in others, than canceled patent claim then, if reissue claim is as broad as or broader in aspect germane to prior art rejection, but narrower in another aspect completely unrelated to rejection, recapture rule bars claim, but, if reissue claim is narrower in aspect germane to prior art rejection, and broader in aspect unrelated to rejection, recapture rule does not bar claim, but other rejections are possible.

**[10] PATENTS k141(7)**

291k141(7)

If reissue claim is broader in some aspects, but narrower in others, than canceled patent claim then, if reissue claim is as broad as or broader in aspect germane to prior art rejection, but narrower in another aspect completely unrelated to rejection, recapture rule bars claim, but, if reissue claim is narrower in aspect germane to prior art rejection, and broader in aspect unrelated to rejection, recapture rule does not bar claim, but other rejections are possible.

**[11] PATENTS k141(6)**

291k141(6)

Claims in application for reissue patent which were broader than they were narrower in manner directly pertinent to subject matter that patentee surrendered throughout prosecution of patent, which claimed method of treating waste paper to remove certain elements, were barred by recapture rule, regardless of whether reissue claims were broader than canceled claims in manner directly related to alleged error supporting reissue. 35 U.S.C.A. § 251.

**[12] PATENTS k140**

291k140

Claims in application for reissue patent that were not subject to recapture rule would not be invalidated solely by defective reissue declaration. 35 U.S.C.A. § 252.

**[13] PATENTS k140**

291k140

Claims in reissue application that were not different from claims in original patent could not alone support reissue application. 35 U.S.C.A. § 251.

**PATENTS k328(2)**

291k328(2)

4,360,402. Cited as prior art.

**PATENTS k328(2)**

291k328(2)

4,780,179. Cited.

\*1466 Lawrence M. Green, Wolf, Greenfield & Sacks, P.C., Boston, MA, argued for appellant. With him on the brief was Christopher S. Schultz.

John M. Whealan, Associate Solicitor, Office of the Solicitor, Patent and Trademark Office, Arlington, VA, argued for appellee. With him on the brief were Nancy J. Linck, Solicitor; Albin F. Drost, Deputy Solicitor, and Scott A. Chambers, Associate Solicitor.

Before MAYER, Circuit Judge, SMITH, Senior Circuit Judge, and CLEVINGER, Circuit Judge.

MAYER, Circuit Judge.

Jean-Marie Clement appeals the decision of the United States Board of Patent Appeals and Interferences sustaining the rejection of claims 1-18 and 49-52 in reissue application Serial No. 08/054,951 under 35 U.S.C. § 251 (1994). Because the board correctly applied the recapture rule to bar claims 49-52 and because claims 1-18 alone cannot support the reissue application, we affirm in part and vacate in part.

#### Background

This case is about U.S. Patent No. 4,780,179 (the '179 patent) issued to Jean- Marie Clement. The '179 patent claims a method for treating waste paper that removes "stickies," such as glues and plastics, under a first set of environmental conditions, before removing inks under a second set of environmental conditions.

The '179 patent issued from application Serial No. 06/822,943 (the '943 application), which was a continuation of application Serial No. 06/482,623 (the '623 application). During prosecution, Clement amended the claims to overcome U.S. Patent No. 4,360,402, issued to Ortner et al. (Ortner), and an article written by Michael Burns entitled "Waste Paper Preparation Plant and Systems," published in the June/August 1973 issue of Paper Technology (Burns). The broadest of the '623 application's claims, original claim 1, recites:

A method of treating a mixture of printed and contaminated waste paper in order to produce pulps for the use in the manufacture of pulp and paper boards, which method comprises:

- (a) forming an aqueous pulp of said waste material at low temperature, low specific mechanical energy, thereby forming a pulpable slurry and releasing the non-ink contaminants from the surface of the paper but without dispersing them inside the fibrous suspension;
- (b) separating the non-ink contaminants from the pulp by mechanical separation, without the use of froth floatation or solvent extraction or other process, using conventional screens and centrifugal cleaners and without any further application of strong shear forces to the pulp;
- (c) softening of the ink particles vehicles and weakening of their bondings with the surface of the fibres by submitting the pulp at a consistency of more than 15 % at the simultaneous actions of (A) high temperature--between 85 and 130 < <degrees> > C.--(B) high shear forces and (C) at least one de-inking agent, under alkaline [sic] conditions;

- (d) detaching the ink particles from the surface of the fibres and dispersing them \*1467 into the fibrous suspension by submitting the pulp to the simultaneous actions of (A) high temperature--between 85 and 130 <<degrees>> C.--(B) high shear forces and (C) at least one chemical dispersing agent, under alkaline [sic] conditions;
- (e) removing the free ink particles by means of the most appropriate known method and up to the degree of brightness required by the final use of the pulp.

In an effort to overcome Ortner, Clement submitted a preliminary amendment in the '943 application dated January 27, 1986, which replaced original claim 1 with claim 42. Claim 42 is limited to: (1) carrying out step (a) at room temperature; (2) using mechanical energy less than 50 KW.H/Ton in step (a); (3) removing the ink by applying a combination of high temperature between 85 and 130 C, mechanical energy greater than 50 KW.H/Ton, and a de-inking or chemical dispersing agent under alkaline conditions in steps (c) and (d), respectively; and (4) limiting the duration of steps (c) and (d) to between two and ten minutes. In this preliminary amendment, Clement argued that Ortner's process could not apply simultaneously the higher temperature and larger shear force (mechanical energy greater than 50 KW.H/Ton) recited in steps (c) and (d). Clement also argued that using a higher temperature in Ortner's process would prevent the final product from having the necessary brightness.

In response, the examiner withdrew the Ortner reference, but relied on Burns until Clement's amendments dated December 23, 1986, and June 29, 1987, and an examiner's amendment dated May 16, 1988, added the following limitations: (1) steps (a) and (b) remove substantially all the non-ink contaminants including the stickies; (2) steps (c) and (d) include strong alkaline conditions having a pH of at least 9; (3) the brightness of the final pulp in step (f) is at least 59 ISO; and (4) step (b) takes place at room temperature. The table at Appendix A shows claim 42 before the last two amendments. In his December 23, 1986, amendment, Clement specifically argued that Burns fails to disclose the strong alkaline conditions having a pH greater than 9 that he added to steps (c) and (d). In his June 29, 1987, amendment, he continued to traverse the examiner's assertion that Burns discloses removing the stickies at room temperature through the application of mechanical energy lower than 50 KW.H/Ton. The patent issued on October 25, 1988, with claim 42 becoming claim 1, as shown in the table at Appendix B.

On October 18, 1990, Clement filed reissue application Serial No. 07/600,012 (the '012 application). During prosecution of the '012 application, he admitted that he added "very specific process parameters" to issued claim 1 during prosecution of the '943 application "in order to distinguish over the prior art." Clement later abandoned the '012 application in favor of continuation reissue application Serial No. 08/054,951 (the '951 application), presently on appeal. The '951 application includes claims 1-18, which correspond to claims 1-18 of the '179 patent, and claims 49-52, which are admittedly broader than the '179 patent's claims. In his reissue declaration, Clement stated that as a result of his failure to understand the claims and his attorney's failure to appreciate the scope of his invention, claims 1-18 of the '179 patent are unduly limited because "step (a) recites forming the first fibrous suspension at room temperature by applying specific mechanical energy lower than 50 KW. H/Ton." In addition, "the temperature, mechanical energy and pH conditions set forth in steps (c) and (d)" unduly



limit claim 1 and claims 2-18, which depend from it. Claim 49 eliminates these limitations and the room temperature limitation in the first claim's step (b). The table at Appendix B compares reissue claim 49 with claim 1 of the '179 patent with differences italicized.

The examiner rejected claims 49-52 under 35 U.S.C. § 251 [FN\*] for being broadened in a reissue application filed outside the two year statutory period. The examiner also rejected \*1468 claims 1-18 and 49-52 under section 251 for lacking a basis for reissue because recapture is not an error so correctable. The examiner found the reissue declaration defective under 37 C.F.R. § 1.175 (1997) because it failed not only to mention the error in step (b), but also to explain sufficiently how any of the errors arose. The examiner determined that these defects were not curable because the recapture rule applied. Clement appealed the examiner's final rejection to the United States Board of Patent Appeals and Interferences (the board).

FN\* Section 251 allows patentees to correct "errors" made during prosecution, such as claiming less than the patentee had a right to claim. A reissue patent may not, however, enlarge the scope of the claims unless the patentee files the reissue application within two years of the grant of the patent.

The board determined that Clement filed his broadening reissue application timely. It further found that during prosecution of the '179 patent, Clement added temperature, mechanical energy, and pH limitations to overcome prior art rejections. The board noted that the temperature limitation in step (a) and the temperature and mechanical energy limitations in steps (c) and (d) "were argued by [Clement] to be features not suggested by Ortner or Burns and ... were accepted by the examiner as distinguishing over these references." It concluded that Clement implicitly admitted that "broader claims not restricted to ... [these limitations] were not patentable over the prior art represented by Ortner." The board found that claims 49-52 do not include these limitations and concluded that the reissue claims seek to broaden the patent in a manner directly pertinent to subject matter that Clement deliberately surrendered to overcome prior art rejections. It therefore sustained the rejection of claims 49-52 for failing to comply with 35 U.S.C. § 251, and the rejection of claims 1-18 and 49-52 based on a defective reissue declaration. Clement appeals.

### Discussion

[1][2][3] Determining whether an applicant has met the statutory requirements of 35 U.S.C. § 251 is a question of law, which we review de novo. *Mentor Corp. v. Coloplast, Inc.*, 998 F.2d 992, 994, 27 USPQ2d 1521, 1524 (Fed.Cir.1993). This legal conclusion is based on underlying findings of fact, which we sustain unless they are clearly erroneous. In *re Kemps*, 97 F.3d 1427, 1430, 40 USPQ2d 1309, 1312 (Fed.Cir.1996); *Mentor*, 998 F.2d at 994, 27 USPQ2d at 1524. An attorney's failure to appreciate the full scope of the invention qualifies as an error under section 251 and is correctable by reissue. In *re Wilder*, 736 F.2d 1516, 1519, 222 USPQ 369, 370-71 (Fed.Cir.1984). Nevertheless, "deliberate withdrawal or amendment ... cannot be said to involve the inadvertence or mistake contemplated by 35 U.S.C. § 251." *Haliczer v. United States*, 174 Ct.Cl. 507, 356 F.2d 541, 545, 148 USPQ 565, 569 (1966). The recapture rule, therefore, prevents a patentee from regaining through

reissue the subject matter that he surrendered in an effort to obtain allowance of the original claims. See *Mentor*, 998 F.2d at 995, 27 USPQ2d at 1524. Under this rule, claims that are "broader than the original patent claims in a manner directly pertinent to the subject matter surrendered during prosecution" are impermissible. *Id.* at 996, 998 F.2d 992, 27 USPQ2d at 1525.

[4] The first step in applying the recapture rule is to determine whether and in what "aspect" the reissue claims are broader than the patent claims. For example, a reissue claim that deletes a limitation or element from the patent claims is broader in that limitation's aspect. Clement argues that the board focused too much on the specific limitations that were omitted from the reissue claims. Although the scope of the claims is the proper inquiry, *In re Richman*, 56 C.C.P.A. 1083, 409 F.2d 269, 274, 161 USPQ 359, 362 (CCPA 1969), claim language, including limitations, defines claim scope. *Abtox, Inc. v. Exitron Corp.*, 122 F.3d 1019, 1023, 43 USPQ2d 1545, 1548 (Fed.Cir.1997); *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 619, 34 USPQ2d 1816, 1819 (Fed.Cir.1995) ("[T]he language of the claim defines the scope of the protected invention."). Under *Mentor*, courts must determine in which aspects the reissue claim is broader, which includes broadening as a result of an omitted limitation. The board did not err by determining which limitations Clement deleted from the patent claims.

[5] The second step is to determine whether the broader aspects of the reissue \*1469 claims relate to surrendered subject matter. To determine whether an applicant surrendered particular subject matter, we look to the prosecution history for arguments and changes to the claims made in an effort to overcome a prior art rejection. See *Mentor*, 998 F.2d at 995-96, 27 USPQ2d at 1524-25; *Ball Corp. v. United States*, 729 F.2d 1429, 1436, 221 USPQ 289, 294-95 (Fed.Cir.1984).

[6][7] Although the recapture rule does not apply in the absence of evidence that the applicant's amendment was "an admission that the scope of that claim was not in fact patentable," *Seattle Box Co. v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 826, 221 USPQ 568, 574 (Fed.Cir.1984), "the court may draw inferences from changes in claim scope when other reliable evidence of the patentee's intent is not available," *Ball*, 729 F.2d at 1436, 221 USPQ at 294. Deliberately canceling or amending a claim in an effort to overcome a reference strongly suggests that the applicant admits that the scope of the claim before the cancellation or amendment is unpatentable, but it is not dispositive because other evidence in the prosecution history may indicate the contrary. [FN\*\*] See *Mentor*, 998 F.2d at 995-96, 27 USPQ2d at 1524-25; *Ball*, 729 F.2d at 1438, 221 USPQ at 296; *Seattle Box Co.*, 731 F.2d at 826, 221 USPQ at 574 (declining to apply the recapture rule in the absence of evidence that the applicant's "amendment ... was in any sense an admission that the scope of [the] claim was not patentable"); *Haliczer*, 356 F.2d at 545, 148 USPQ at 569 (acquiescence in the rejection and acceptance of a patent whose claims include the limitation added by the applicant to distinguish the claims from the prior art shows intentional withdrawal of subject matter); *In re Willingham*, 48 C.C.P.A. 727, 282 F.2d 353, 354, 357, 127 USPQ 211, 213, 215 (CCPA 1960) (no intent to surrender where the applicant canceled and replaced a claim without an intervening action by the examiner). Amending a claim "by the inclusion of an

additional limitation [has] exactly the same effect as if the claim as originally presented had been canceled and replaced by a new claim including that limitation." In re Byers, 43 C.C.P.A. 803, 230 F.2d 451, 455, 109 USPQ 53, 55 (CCPA 1956).

FN\*\* For example, if an applicant amends a broad claim in an effort to distinguish a reference and obtain allowance, but promptly files a continuation application to continue to traverse the prior art rejections, circumstances would suggest that the applicant did not admit that broader claims were not patentable--assuming that the applicant does not ultimately

abandon the continuation application because the examiner refuses to withdraw the rejections.

[8][9] Once we determine that an applicant has surrendered the subject matter of the canceled or amended claim, we then determine whether the surrendered subject matter has crept into the reissue claim. Comparing the reissue claim with the canceled claim is one way to do this. In re Wadlinger, 496 F.2d 1200, 1204, 181 USPQ 826, 830 (CCPA 1974); Richman, 409 F.2d at 274, 161 USPQ at 362. If the scope of the reissue claim is the same as or broader than that of the canceled claim, then the patentee is clearly attempting to recapture surrendered subject matter and the reissue claim is, therefore, unallowable. Ball, 729 F.2d at 1436, 221 USPQ at 295 ("The recapture rule bars the patentee from acquiring, through reissue, claims that are the same or of broader scope than those claims that were canceled from the original application.") (emphasis omitted); Byers, 230 F.2d at 456, 109 USPQ at 56. In contrast, a reissue claim narrower in scope escapes the recapture rule entirely. Ball, 729 F.2d at 1436, 221 USPQ at 295.

Some reissue claims, however, are broader than the canceled claim in some aspects, but narrower in others. In Mentor, for example, the issued claim, which was directed to a condom catheter, recited an adhesive means that was transferred from an outer to an inner surface without turning the condom inside-out. 998 F.2d at 993, 27 USPQ2d at 1523. The issued claim also recited, inter alia, that the condom catheter included a "thin cylindrical sheath member of resilient material rolled outwardly upon itself to form consecutively larger rolls...." One canceled claim recited an adhesive means between the rolls, but did not specify that the adhesive was transferred from the outer to the inner surface without turning the condom inside-out. Another canceled claim recited that \*1470 adhesive was transferred from the outer to the inner surface, but did not specify that this operation was done without turning the condom inside-out. The prior art rejections focused on the obviousness of the adhesive means positioned between the rolls and the process of transferring adhesive to the inner surface of the condom.

In making amendments to the claim, the applicant argued that "none of the references relied upon actually showed the transfer of adhesive from the outer surface to the inner surface as the sheath is rolled up and then unrolled." Id. at 995-96, 998 F.2d 992, 27 USPQ2d at 1524-25 (emphasis in original). The reissue claim eliminated the limitation that adhesive was transferred from the outer to the inner layer, and was, therefore, broader in this aspect. The reissue claim was also narrower than the canceled claim because it recited that the catheter

included "a thin, flexible cylindrical member of resilient material rolled outwardly upon itself to form a single roll ...." (Emphasis added). We held that, although the "flexible" and "single roll" limitations made the reissue claim narrower than both the canceled and issued claims, it did not escape the recapture rule because these limitations did not "materially narrow the claim[ ]." Id. at 996-97, 27 USPQ2d at 1525-26.

Similarly, in *Ball*, the issued claim recited "a plurality of feedlines" and a "substantially cylindrical conductor." 729 F.2d at 1432-33, 221 USPQ at 291-92. The canceled claim recited "feed means includ[ing] at least one conductive lead," and a "substantially cylindrical conductor." The prosecution history showed that the patentee added the "plurality of feedlines" limitation in an effort to overcome prior art, but the cylindrical configuration limitation was neither added in an effort to overcome a prior art rejection, nor argued to distinguish the claims from a reference. Id. The reissue claim included limitations not present in the canceled claims that related to the feed means element, but allowed for multiple feedlines. On balance, the claim was narrower than the canceled claim with respect to the feed means aspect. The reissue claim also deleted the cylindrical configuration limitation, which made the claim broader with respect to the configuration of the conductor. Id. at 1437, 729 F.2d 1429, 221 USPQ at 295. We allowed the reissue claim because the patentee was not attempting to recapture surrendered subject matter. Id. at 1438, 729 F.2d 1429, 221 USPQ at 296.

[10] In both *Mentor* and *Ball*, the relevance of the prior art rejection to the aspects narrowed in the reissue claim was an important factor in our analysis. From the results and reasoning of those cases, the following principles flow: (1) if the reissue claim is as broad as or broader than the canceled or amended claim in all aspects, the recapture rule bars the claim; (2) if it is narrower in all aspects, the recapture rule does not apply, but other rejections are possible; (3) if the reissue claim is broader in some aspects, but narrower in others, then: (a) if the reissue claim is as broad as or broader in an aspect germane to a prior art rejection, but narrower in another aspect completely unrelated to the rejection, the recapture rule bars the claim; (b) if the reissue claim is narrower in an aspect germane to prior art rejection, and broader in an aspect unrelated to the rejection, the recapture rule does not bar the claim, but other rejections are possible. *Mentor* is an example of (3)(a); *Ball* is an example of (3)(b).

[11] In our case, reissue claim 49 is both broader and narrower in areas relevant to the prior art rejections. Comparing reissue claim 49 with claim 42 before the May 1988 and June 1987, amendments (see the tables at Appendices A and B), we see that claim 49 is narrower in one area, namely, the brightness is "at least 59 ISO in the final pulp." This narrowing relates to a prior art rejection because, during the prosecution of the '179 patent, Clement added this brightness limitation in an effort to overcome Burns. Our comparison also reveals that reissue claim 49 is broader in that it eliminates the room temperature and specific energy limitations of step (a), and the temperature, specific energy, and pH values of steps (c) and (d). This broadening directly relates to several prior art rejections because, in an effort to overcome Ortner, Clement added to step (a) the limitation that it is carried out "at room temperature," and applies "specific \*1471 mechanical energy lower than 50 KW.H/Ton to form a pumpable slurry...." He argued, moreover, that the latter limitation overcame Burns despite the

examiner's contention to the contrary. Clement also added to steps (c) and (d) the temperature and specific energy values in an effort to overcome Ortner, and the "strong" alkaline conditions "having a pH of at least 9" limitation in an effort to overcome Burns. Clement admitted, furthermore, that he added these "very specific process parameters ... in order to distinguish over the prior art." Claim 49 omits each of these limitations.

On balance, reissue claim 49 is broader than it is narrower in a manner directly pertinent to the subject matter that Clement surrendered throughout the prosecution. Even with the additional limitations, claims 50-52 are also broader than they are narrower in a manner directly pertinent to the subject matter that Clement surrendered during prosecution.

We do not address whether the reissue claims in this case are broader than the canceled claims in a manner directly related to the alleged error supporting reissue because we see no dispositive significance in this inquiry. In *Ball*, we said that the recapture rule does not apply when the reissue claim is broader than the canceled claim in a manner unrelated to the alleged error supporting reissue, but did not address whether the recapture rule would apply if the broadening did relate to the alleged error. 729 F.2d at 1438, 221 USPQ at 296. We can envision a scenario in which the patentee intentionally fails to enumerate an error so that he may eliminate a limitation that he argued distinguished the claim from a reference or added in an effort to overcome a reference and claim protection under *Ball*. We, therefore, think *Ball* is limited to its facts: the recapture rule does not apply when the broadening not only relates to an aspect of the claim that was never narrowed to overcome prior art, or argued as distinguishing the claim from the prior art, but also is not materially related to the alleged error. Accordingly, *Ball* does not require us to determine whether the broader aspects of the reissue claims are related to the alleged error supporting reissue.

Clement argues that, although claim 49 is broader than the issued claims, it is materially narrower than original claim 1; therefore, the recapture rule should not apply. He relies on the unsupported assumption that, for purposes of the recapture rule, we should compare the scope of the reissue claims with that of only original claim 1 to determine whether or not the reissue claim is broader in a material way. Clement has chosen original claim 1 as the basis for comparison because, in his view, it does not include limitations enumerated by the board as missing from the reissue claims. These limitations are the room temperature limitation in step (a) and the specific values of the specific energy limitations in steps (c) and (d).

Clement's assumption ignores the board's finding that the reissue claims delete the value of the high temperature and pH limitations in steps (c) and (d) and the room temperature limitation of step (b). It also ignores much of the prosecution history. The prosecution history shows that Clement abandoned the subject matter of claim 42, as it existed before the examiner's amendment dated May 16, 1988, because he allowed the examiner to amend it to obtain allowance and no other evidence suggests that Clement did not intend to abandon it. He also abandoned the subject matter of claim 42, as it existed before his June 29, 1987, amendment, as it existed before his December 23, 1986, amendment, and as it existed in his preliminary amendment. Based on his actions and statements in the prosecution history of the '179 patent and his admission in the history of the '012 application, every time Clement

amended his claims, he intentionally omitted or abandoned the claimed subject matter. Furthermore, his argument that we should compare reissue claim 49 with original claim 1 is reminiscent of the patentee's unsuccessful argument in Byers. There, the patentee argued that the reissue claims were "intermediate in scope between certain broad claims which were canceled from [the patentee's] original application and the limited claim allowed in the patent." 230 F.2d at 457, 109 USPQ at 57. In response, the court \*1472 noted that the "rejection is not based on the cancellation of the broader claims referred to in [the patentee's] brief.... The fact that there were other claims whose cancellation did not constitute such a bar is immaterial." Id.

We agree with the board's conclusion that the reissue claims are broader than the patent claims in a manner directly pertinent to the subject matter that Clement surrendered during prosecution. Therefore, it correctly applied the recapture rule, and we affirm the board's decision to sustain the examiner's rejection of claims 49-52.

[12] Because we affirm the board's decision on recapture, Clement cannot cure the allegedly defective declaration with respect to claims 49-52. As a result, we do not reach that issue. Because claims 1-18 are not subject to the recapture rule, however, a defective declaration would not, in and of itself, invalidate them. The Commissioner concedes this point and reminds that, because under 35 U.S.C. § 252 (1994) the surrender of the '179 patent does not take effect until the reissue patent issues, "original claims 1-18 continue to exist with their normal presumption of validity," unaffected by the examiner's rejection based on the allegedly defective declaration. We, therefore, vacate the board's decision to the extent that it rejects claims 1- 18 because of the allegedly defective declaration.

[13] Claims 1-18 alone cannot support a reissue application. See *In re Keil*, 808 F.2d 830, 830, 1 USPQ2d 1427, 1428 (Fed.Cir.1987) (Section 251 requires a change in "either the patent specification or claims."); *In re Dien*, 680 F.2d 151, 152 n. 4, 214 USPQ 10, 12 n. 4 (CCPA 1982) ("[I]t goes without saying that reissue of a patent in identical form with the original patent is not a possibility."). The '951 application would fail, therefore, to comply with section 251 even if Clement were to cure the allegedly defective declaration.

#### Conclusion

Accordingly, the decision of the Board of Patent Appeals and Interferences sustaining the rejection of claims 49-52, and to reject the reissue application is affirmed, and its decision to reject original claims 1-18 is vacated.

#### COSTS

Each party shall bear its own costs.

AFFIRMED IN PART AND VACATED IN PART.

ATTACHMENT  
APPENDIX A

Claim 42

Before Clement's Amendment on  
6/29/87

A method of treating a mixture of printed and contaminated waste paper in order to produce pulps for use in the manufacture of paper and paperboards, which method comprises:

(a) forming an aqueous fibrous suspension of said waste paper at room temperature without deinking agents by applying specific mechanical energy lower than [sic] 50 KW.H/Ton to form a pumpable slurry and to release the non-ink contaminants, from the surface of the paper fibers in the absence of deinking agents and without dispersing such non-ink contaminants as finely divided particles throughout the fibrous suspension;

(b) removing the released non-ink contaminants from the fibrous suspension by screening and cleaning;

(c) softening the ink vehicles and weakening their binding with the surface of the fibers by submitting the fibrous suspension at a consistency of more than 15% to the simultaneous actions of (A) a high temperature between 85 and 130 C, (B) high shear forces substantially corresponding to a specific

Claim 42

Before Examiner's Amendment on  
5/16/88

A method of treating a mixture of printed and contaminated waste paper in order to produce pulps for use in the manufacture of paper and paperboards, which method comprises:

(a) forming a first aqueous fibrous suspension of said waste paper at room temperature by applying specific mechanical energy lower than [sic] 50 KW.H/Ton to form a pumpable slurry and to release the non-ink contaminants, from the surface of the paper and without dispersing such non-ink contaminants as finely divided particles throughout the fibrous suspension;

(b) removing the non-ink contaminants which have been released without dispersal as finely divided particles from the first fibrous suspension by screening and cleaning to form a second aqueous fibrous suspension substantially free of non-ink contaminants;

(c) after the step of removing the non-ink contaminants softening the ink vehicles and weakening their binding with the surface of the fibers by submitting the second fibrous suspension at a consistency of more than 15% to the simultaneous actions of (A) a high temperature between 85 and 130 C, (B) high shear forces

mechanical energy of more than 50 KW.H/Ton applied at the said consistency of more than 15 % and (C) at least one deinking agent under strong alkaline conditions having a pH preferably greater than 9; substantially corresponding to a specific mechanical energy of more than 50 KW.H/Ton applied at the said consistency of more than 15 % and (C) at least one deinking agent under strong alkaline conditions having a pH of at least 9; and

(d) detaching the ink particles from the surface of the fibers and dispersing them into the fibrous suspension by submitting the fibrous suspension to the simultaneous actions of (A) high temperature between 85 and 130 C, (B) high shear forces substantially corresponding to a specific mechanical energy of more than 50 KW.H/Ton applied at the said consistency of more than 15 % and (C) at least one chemical dispersing agent, under strong alkaline conditions having a pH preferably greater than 9; (d) detaching the ink particles from the surface of the fibers and dispersing them into the second fibrous suspension by submitting the second fibrous suspension to the simultaneous actions of (A) high temperature between 85 and 130 C, (B) high shear forces substantially corresponding to a specific mechanical energy of more than 50 KW.H/Ton applied at the said consistency of more than 15 % and (C) at least one chemical dispersing agent, under strong alkaline conditions having a pH of at least 9 whereby higher specific energy inputs and higher temperatures are used to detach the ink particles from the fibers of the second fibrous suspension after removal of the non-ink contaminants than are used on the first fibrous suspension before removal of the non-ink contaminants;

(e) limiting the total duration of the ink softening and detaching steps (c) and (d) to a range between 2 and 10 minutes and (e) limiting the total duration of the ink softening and detaching steps (c) and (d) to a range between 2 and 10 minutes and

(f) removing the detached ink particles from the fibrous suspension to provide the degree of brightness required in the final product of the pulp. (f) removing the detached ink particles from the second fibrous suspension to provide the degree of brightness required in the final product of the pulp.

## APPENDIX B



Patent Claim 1

A method of treating a mixture of printed and contaminated waste paper in order to produce a pulp for use in the manufacture of paper and paperboards, said waste paper containing non-ink contaminants including stickies, which method comprises:

(a) forming a first aqueous fibrous suspension of said waste paper at room temperature by applying specific mechanical energy lower than [sic] 50 KW.H/Ton to form a pumpable slurry and to release substantially all of the non-ink contaminants including the stickies, from the surface of the paper and without dispersing such non-ink contaminants as finely divided particles throughout the fibrous suspension;

(b) removing substantially all of the non-ink contaminants including the stickies, which have been released without dispersal as finely divided particles from the first fibrous suspension by screening and cleaning at room temperature to form a second aqueous fibrous suspension substantially free of the non-ink contaminants including the stickies;

(c) after the step of removing the non-ink contaminants softening the ink vehicles and weakening their binding with the surface of the fibers by submitting the second fibrous suspension at a consistency of more than 15% to the simultaneous actions of (A) a high temperature between 85 and 130 C., (B) high shear forces

Reissue Claim 49

A method of treating a mixture of printed and contaminated waste paper in order to produce a pulp for use in the manufacture of paper and paperboards, said waste paper containing non-ink contaminants including stickies, which method comprises:

(a) forming a first aqueous fibrous suspension of said waste paper at a temperature below the melting point of the non-ink contaminants by applying specific mechanical energy sufficient to form a pumpable slurry and to release substantially all of the non-ink contaminants including the stickies, from the surface of the paper and without dispersing such non-ink contaminants as finely divided particles throughout the fibrous suspension;

(b) removing substantially all of the non-ink contaminants including the stickies, which have been released without dispersal as finely divided particles from the first fibrous suspension by screening and cleaning to form a second aqueous fibrous suspension substantially free of the non-ink contaminants including the stickies;

(c) after the step of removing the non-ink contaminants, (1) softening the ink vehicles and weakening their binding with the surface of the fibers, and then (2) detaching the ink particles from the surface of the fibers and dispersing the particles into the second fibrous suspension by submitting the second

substantially corresponding to a specific mechanical energy of more than 50 KW.H/Ton applied at the said consistency of more than 15 % and (C) at least one deinking agent under strong alkaline conditions having a pH of at least 9; and fibrous suspension at a consistency of more than 15 % to the simultaneous actions of temperature, pressure, specific energy and chemical dosing sufficient to insure softening of the ink vehicles,

(d) detaching the ink particles from the surface of the fibers and dispersing them into the second fibrous suspension by submitting the second fibrous suspension to the simultaneous actions of (A) high temperature between 85 and 130 C., (B) high shear forces substantially corresponding to a specific mechanical energy of more than 50 KW.H/Ton applied at the said consistency of more than [sic] 15 % and (C) at least one chemical dispersing agent, under strong alkaline conditions having a pH of at least 9 whereby higher specific energy inputs and higher temperatures are used to detach the ink particles from the fibers of the second fibrous suspension after removal of the non-ink contaminants than are used on the first fibrous suspension before removal of the non-ink contaminants; detachment of the ink particles from the surface of the fibers and dispersion of the detached ink particles into the second fibrous suspension, whereby higher specific energy inputs and higher temperatures are used to detach the ink particles from the fibers of the second fibrous suspension after removal of the non-ink contaminants than are used on the first fibrous suspension before removal of the non-ink contaminants;

(e) limiting the total duration of the ink softening and detaching steps (c) and (d) to a range between 2 and 10 minutes and (d) limiting the total duration of step (c)(1) and (c)(2) to a range between 2 and 10 minutes and

(f) removing the detached ink particles from the second fibrous suspension to provide a brightness of at least 59 ISO [in] the final pulp. (e) removing the detached ink particles from the second fibrous suspension to provide a brightness of at least 59 ISO in the final pulp.

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